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June 12, 2009

Reference No. 027545-00

Mr. Kenny Jaynes Chief, Compliance Section U.S. Army Corps of Engineers Galveston District Regulatory Branch P.O. Box 1229 Galveston, Texas 77553-1229

Dear Mr. Jaynes:

Re:

Wetland Delineation Data Report Star Lake Canal Superfund Site

Port Neches, Jefferson County, Texas

Conestoga-Rovers & Associates (CRA), on behalf of Chevron Environmental Management Company (CEMC) and Huntsman Petrochemical Company (Huntsman), submits herein to the Galveston District, U.S. Army Corps of Engineers (USACE) the Wetland Delineation Data Report for the Star Lake Canal Superfund Site located in Jefferson County, Texas (Site). The U.S. Environmental Protection Agency (EPA) entered into an Administrative Settlement Agreement and Order on Consent (AOC) for Remedial Investigation/Feasibility Study (RI/FS) (CERCLA Docket No. 06-02-06) with CEMC and Huntsman for the Site in December 2005.

This Report is a presentation of data on wetlands potentially under the jurisdiction of the USACE at a portion of the Site that is currently under investigation as part of the RI/FS. This report is provided to inform your office that contractors working on behalf of CEMC and Huntsman plan to clear limited amounts of wooded areas in and near wetlands with the use of mechanized equipment at the Site.

Should you have any questions or require additional information regarding this submittal, please contact CRA or Mr. Gary Jacobson at (713) 432-2636.

Yours truly,

CONESTOGA ROVERS & ASSOCIATES

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Equal Employment Opportunity Employer

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June 12, 2009

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Ref. No. 027545-00

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WETLAND DELINEATION DATA REPORT

STAR LAKE CANAL SUPERFUND SITE PORT NECHES, JEFFERSON COUNTY, TEXAS

Prepared For:

Chevron Environmental Management Company 4800 Fournace Place, E 534A Bellaire, Texas 77401

JUNE 2009

REF. NO. 027545-00 (12)

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1.0 INTRODUCTION

On behalf of Chevron Environmental Management Company (CEMC) and Huntsman Petrochemical Corporation (Huntsman), Conestoga-Rovers & Associates, Inc. (CRA) submits herein to the Galveston District of U.S. Army Corps of Engineers (USACE) a Wetland Delineation Data Report (Report) for a portion of the Star Lake Canal Superfund Site (Site) near Port Neches, Jefferson County, Texas. The U.S. Environmental Protection Agency (EPA) entered into an Administrative Settlement Agreement and Order on Consent (AOC) for Remedial Investigation/Feasibility Study (RI/FS) (CERCLA Docket No. 06-02-06) with CEMC and Huntsman for the Site in December 2005. CRA and ENTRIX, Inc. (ENTRIX) provide technical services to CEMC and Huntsman for the Site. This Report is a presentation of data on wetlands potentially under the jurisdiction of the USACE at a portion of the Site that is currently under investigation as part of the RI/FS.

The Site consists of Star Lake Canal, Jefferson Canal, Gulf States Utilities Canal, Molasses Bayou, and the adjacent wetland areas. The Site is defined in the AOC as the lengths of the two industrial canals from their origins to the confluence of Star Lake Canal and the Neches River and the adjacent wetlands. The Site is located in Jefferson County, Texas, in and around the cities of Port Neches and Groves.

This objective of this Report is to present field data on the three diagnostic characteristics of wetlands, field data on the characteristics of tributaries to traditional navigable waters of the United States, an opinion on the presence and potential extent of wetlands, and an opinion on USACE jurisdiction. This report was prepared in accordance with guidance found in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Army Engineer Waterways Experiment Station 1987), the *Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region* (U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (U.S. Army Corps of Engineers and U.S. Environmental Protection Agency 2007).

2.0 BACKGROUND

Wetlands are defined in federal regulations as, "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." For property to be considered wetlands under the jurisdiction of the USACE, it must have a hydrophytic plant community,

hydric soils, saturation in the root zone of plants for at least 5 percent of the growing season in consecutive days; and must be adjacent to, hydrologically connected to, or have a significant nexus with traditional navigable waters. Each of these characteristics will be described for the area delineated.

In approximately February 1983, the Jefferson County Drainage District Number 7 (DD #7) dredged Jefferson Canal by dragline after acquiring an easement on the canal from Texaco Chemical Company (TCC). The DD #7 deposited dredged materials onto the banks of Jefferson Canal in and around an area south of FM Road 366. The deposited dredged spoil material was subsequently determined to contain potentially hazardous constituents.

The RI work planned for the Jefferson Canal spoil pile area includes evaluation of the spoil piles and determination of the feasibility of long-term remedial action. Prior to evaluation of the spoil piles, vegetation removal is required. The spoil piles along Jefferson Canal are currently covered with dense vegetation. Removal of trees, brush, vegetation, and/or any surface obstructions is necessary to remove the hazards cited above and complete the necessary RI work. The Jefferson Canal spoil piles will be trimmed of vegetation and limited debris with the use of mechanical equipment. Any trees present will be trimmed and cut at the ground surface. The trees, brush and/or vegetation will be chipped and mulched into small pieces with the use of whole-tree chippers. These mulched materials will be spread on the ground surface for beneficial reuse at the completion of vegetation clearing activities. Any other surface or subsurface obstructions present in the spoil pile areas, such as concrete blocks, will also be removed, to the degree practical. A routine long-term maintenance program will be established to manage vegetative growth at the spoil piles throughout duration of the RI/FS activities. Topographic surveying and mapping will be completed by a licensed land surveyor to assist in the identification and surface delineation of the spoil piles. Following completion of the vegetation removal and topographic mapping, a work scope will be prepared that further outlines additional investigation that may be necessary to assess the nature and extent of impact within the piles, and the potential risk to human and ecological receptors.

Wetlands were delineated near the downstream portion of Jefferson Canal. This report will be provided to the Galveston District of the USACE, the EPA, and the trustees. As established by Regulatory Guidance Letter 85-07, issued by USACE Headquarters, and confirmed by subsequent Headquarters guidance, neither the State of Texas nor the EPA are required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act for actions taken at Sites under the authority of CERCLA.

3.0 WETLAND DELINEATION AREA

3.1 LOCATION

The Site is located near Port Neches, Texas, approximately 2 miles northwest of the interchange of Highway TX 366 and Highway TX 73, in Jefferson County. The wetland delineation area consists of portions of the Jefferson Canal Spoil Pile Area of Investigation (AOI) and the Jefferson Canal Downstream AOI at the Site. The geographic coordinates near the center of the area delineated are N 29° 57′ 54.6″, W 93° 55′ 5.6″. The area delineated is best accessed from the south roadside of a private drive west of Pine Top Road at the approximate geographic coordinates N 29° 58′ 0.1″, W 93° 55′ 4.2″. The center of the area delineated is approximately 0.16 mile south of Star Lake Canal and 3.7 miles west of Sabine Lake.

The Site is located between the two municipalities of Port Neches to the west and Groves to the south. Immediately to the north is an area of marsh associated with the floodplain of the Neches River, which flows in a southeasterly direction to Sabine Lake, approximately 4 miles to the east. The overall setting is within the Texas coastal plain, between developed areas to the south and west, and natural areas to the north and east.

A vicinity map that shows the location of the Site is included as Figure 1. Figure 2 shows the locations of the Jefferson Canal Spoil Pile and Jefferson Canal Downstream AOIs and the area delineated.

3.2 DESCRIPTION

CRA delineated an area proposed for mechanized land clearing that includes portions of the Jefferson Canal Spoil Pile and Jefferson Canal Downstream AOIs, shown on Figure 2. The spatial extent of the Jefferson Canal Spoil Pile AOI will be modified to include the area recently evaluated and identified to contain dredged spoils. The area delineated includes spoil piles, parts of nearby fallow fields, and a limited area of bottomland hardwoods. The area delineated is bordered to the east by a Jefferson Canal, to the west by pasture, to the south by the Kansas City Southern Railroad right-of-way, and to the north by a levee private access road to the Jefferson Canal pump station operated by the Jefferson County DD #7.

The area is vegetated by two distinct communities, an early successional bottomland hardwood forest and fallow agricultural field. The field is typical of upland pasture used primarily for grazing cattle, and supports upland grasses. Cattle were observed

foraging. The forested area, which includes the spoil piles, is densely vegetated in the understory and midstory by vines, shrubs, and saplings. The overstory is thin, with few mature trees.

The spoil piles are vegetated by an early successional bottomland hardwood forest and are densely vegetated in the understory and midstory. The crest of the spoil piles are approximately four feet above the surrounding terrain.

The topography gently slopes 2 to 5 degrees down to the northeast with approximately 10 feet of variance in elevation throughout the area delineated. A series of canals, levees, dams, and a pump station control the overall hydrology in the vicinity. The area delineated drains to the northeast towards Jefferson Canal, which joins with Star Lake Canal to the north and ultimately to the Neches River.

4.0 FIELD SURVEY

4.1 GENERAL

On March 8 and 9, 2009, CRA field personnel completed a field survey to inspect the proposed vegetation removal area. Nine surface soil samples were collected to characterize local habitat and determine wetland characteristics. Sample locations were chosen throughout the area to represent homogeneous areas and to help define wetland/non-wetland boundaries. At each sample location, dominant vegetative species were recorded, soil samples were collected and examined for identification and determination of hydric properties, and observations were made on hydrologic conditions. Photographs 1 through 9 show sample locations and portions of the area delineated (Appendix C). Data collected from the 9 sample locations are summarized on Routine Wetland Determination Data Forms attached in Appendix A. Sample locations are shown on Figure 2.

4.2 PRELIMINARY DESKTOP REVIEW

Prior to the field survey, CRA completed a preliminary review of available mapped information for the Site. Sources reviewed include the local Natural Resources Conservation Service (NRCS) soil survey, the NRCS Web Soil Survey, the USGS 7.5-minute topographic map "Port Neches, Texas," the National Wetlands Inventory map, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), Light Detection and Ranging (LIDAR) contour data, and recent aerial

photography. The National Wetlands Inventory map identifies freshwater forested/shrub wetlands adjacent to the east side, and an area of mixed freshwater forested/shrub and freshwater emergent wetlands to the west of the area delineated. Figure 3 shows National Wetlands Inventory map information for the area delineated. The FIRM (City of Port Neches, Texas, Jefferson County) shows that the area delineated is between the 100-year floodplain and the 500-year floodplain.

4.3 FIELD PERSONNEL

Field data were collected by Mr. Brandon Owens and Mr. Matt Brown of CRA, and Mr. John Williams of ENTRIX. Mr. Owens is a biologist with 5 years of experience performing wetland delineations and 6 years of experience identifying vegetation. Mr. Brown is a biologist with 1 year of experience performing wetland delineations and identifying vegetation. Mr. Williams is a biologist with 2 years of experience performing wetland delineations and 4 years of experience identifying vegetation. Data were reviewed by Mr. David Marschall, a wetland specialist with 30 years of experience working with the Section 404 regulatory program. Messrs. Owens, Brown, and Marschall have received qualification training for the Corps of Engineers Wetland Delineator Certification Program.

5.0 SITE-SPECIFIC DATA

5.1 SOILS

The NRCS *Web Soil Survey* shows that the area delineated may be underlain by Franeau clay, 0 to 1 percent slopes, and League-Urban land complex, 0 to 1 percent slopes. Samples were collected to approximately 20 inches below the soil surface. The depth of each sample was sufficient to determine changes in the upper horizons and to observe field indicators of hydric soil. Soil samples were described and compared to descriptions and maps in the soil survey. Figure 4 shows soils in the area of the Site as mapped by the USDA.

Field survey data generally agree with the soil survey. Observations indicate that the area delineated is underlain by League-Urban land complex, 0 to 1 percent slopes, on the eastern two-thirds, and Franeau clay, 0 to 1 percent slopes on the western third.

Soils of the League Series are nearly level clays found on the coastal prairie. They are somewhat poorly drained, exhibit very slow permeability and high runoff, and are listed

as hydric soils on the NRCS National Hydric Soils list. In the vicinity of the area delineated, they are found in association with Urban land, the name given to areas disturbed or manipulated to the extent that they have lost natural soil profiles or may be paved or covered by buildings. Disturbed profiles were observed throughout the area delineated, but particularly in and around the spoil piles. Despite the historical disturbance, indicators of hydric soils were observed in areas mapped as League-Urban land complex.

Franeau clay, 0 to 1 percent slopes, was observed on the western third of the area delineated, particularly in the fallow pasture. Franeau clay is listed as a non-hydric soil on the NRCS National Hydric Soils list.

5.2 VEGETATION

The wetland delineation area is vegetated by an early successional bottomland hardwood forest on and adjacent to the spoil piles, and fallow pasture between the spoil piles. The forest is densely vegetated in the understory and midstory. Dominant midstory species include poison sumac, hackberry, green ash, mulberry, black willow, Drummond red maple, and tallow. Dominant understory species include wild strawberry, green flat-sedge, soft rush, pepper vine, swamp mallow, wild onion, sawtooth blackberry, and southern dewberry. There are only a few mature sugarberry, green ash, and tallow. The non-forested areas support grasses and field species that are typical of a fallow pasture. The open fields are dominated by St. Augustine grass, dandelion, sweet pea, crow poison, horseflyweed, yellow sweet clover, and eastern pasqueflower.

The criterion for wetland vegetation was met at most sample locations in the young forest but not in the fields. Herbaceous wetland plants were absent from the spoil piles, as was wetland hydrology. However, despite the rise in elevation, woody hydrophytic plants were observed on the spoil piles likely due to the nearby seed sources.

5.3 HYDROLOGY

The landscape slopes gently to the northeast and appears to drain directly towards Jefferson Canal. Natural hydrology has been modified by levees and other embankments for flood control. With the exception of the spoil piles, primary indicators of wetland hydrology were observed within the wooded areas, including inundation, soil saturation in the upper 12 inches, water marks, drift lines, and drainage patterns in

wetlands. Secondary indicators of wetland hydrology observed include water-stained leaves and positive FAC-Neutral Tests. No wetland hydrology indicators were observed in the open fields.

5.4 WATERS OF THE UNITED STATES

Jefferson Canal is a first-order tributary of the Neches River, which is a traditional navigable water (TNW) of the United States. Jefferson Canal outfalls into Star Lake Canal. This canal is a relatively permanent water (RPW), and in the opinion of CRA and ENTRIX will fall under USACE jurisdiction. Data on Jefferson Canal is presented on Approved Jurisdictional Determination Form in Appendix B.

6.0 RESULTS

Data were gathered and observations were made in portions of the Jefferson Canal Spoil Pile and Jefferson Canal Downstream AOIs at the Star Lake Canal Superfund Site in Jefferson County, Texas. Conditions were documented at 9 sample locations. The findings include:

- <u>Soils</u>: The area delineated was observed to be entirely underlain by Franeau clay and soils of the League-Urban land Complex. Most soil profiles had inclusions of spoil from the excavation of Jefferson Canal. Franeau clay, 0 to 1 percent slopes, is a non-hydric soil and was observed in open fields. Soils of the League-Urban land complex, 0 to 1 percent slopes, were observed in the wooded areas. League clay is a hydric soil that occurs next to two spoil piles. The spoil material does not have a normal soil profile, and does not exhibit hydric properties.
- <u>Vegetation</u>: Forested areas, including the spoil piles, are dominated by wetland vegetation. Open pasture within the delineation area is dominated by upland grasses and forbs.
- <u>Hydrology</u>: Primary and secondary indicators of wetland hydrology were observed predominantly in the wooded areas, but not on the spoil piles. Wetland hydrology indicators were not observed in the open fields.
- <u>Waters of the United States</u>: There is one tributary of the Neches River within the area delineated. The body of water is observed to be relatively permanent water.

7.0 **SUMMARY**

Positive evidence of the diagnostic characteristics of wetlands was found at 6 of the 9 sample locations across the wetland delineation area. Approximately 5.5 acres appear to meet the technical criteria for wetlands based on guidance in the *Corps of Engineers Wetlands Delineation Manual*. Based on the adjacency of relatively permanent waters and traditional navigable waters, it is the opinion of CRA and ENTRIX that these wetlands would likely be considered jurisdictional by the Galveston District of the USACE. This Report serves as a notification of the planned Site activities as a permit is not required for proposed work in wetland areas at the Site. During the course of the planned RI/FS activities, impacts to wetlands at the Site will be minimized to the extent practical. Figure 2 shows shaded areas that indicate potential jurisdictional wetlands identified within the area delineated.

8.0 <u>REFERENCES</u>

- Environmental Laboratory, Corps of Engineers Wetlands Delineation Manual, U.S. Army Engineer Waterways Experiment Station, 1987.
- Environmental Laboratory, Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, U.S. Army Corps of Engineers Wetlands Regulatory Assistance Program, October 2008.
- Federal Insurance Administration, Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map, "City of Port Neches, Texas, Jefferson County," Community-Panel Number 485500 0005D, January 1983.
- National Cooperative Soil Survey, Web Soil Survey (websoilsurvey.nrcs.usda.gov). U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C. 2008
- Soil Conservation Service, *Soil Survey of Jefferson County, Texas*, U.S. Department of Agriculture, 1977.
- U.S. Fish and Wildlife Service, *National List of Plant Species That Occur in Wetlands: South Plains (Region 6)*, U.S. Department of Interior, 1988.
- U.S. Fish and Wildlife Service, National Wetlands Inventory, web mapping.

U.S. Geological Survey, 7.5-Minute Series Topographic Map "Port Neches, Texas," U.S. Department of Interior, 1992.

U.S. Geological Survey, 7.5-Minute Series Topographic Map "Port Neches, Texas," U.S. Department of Interior, 1995.

Should you have any questions or require additional information regarding this submittal, please contact the undersigned.

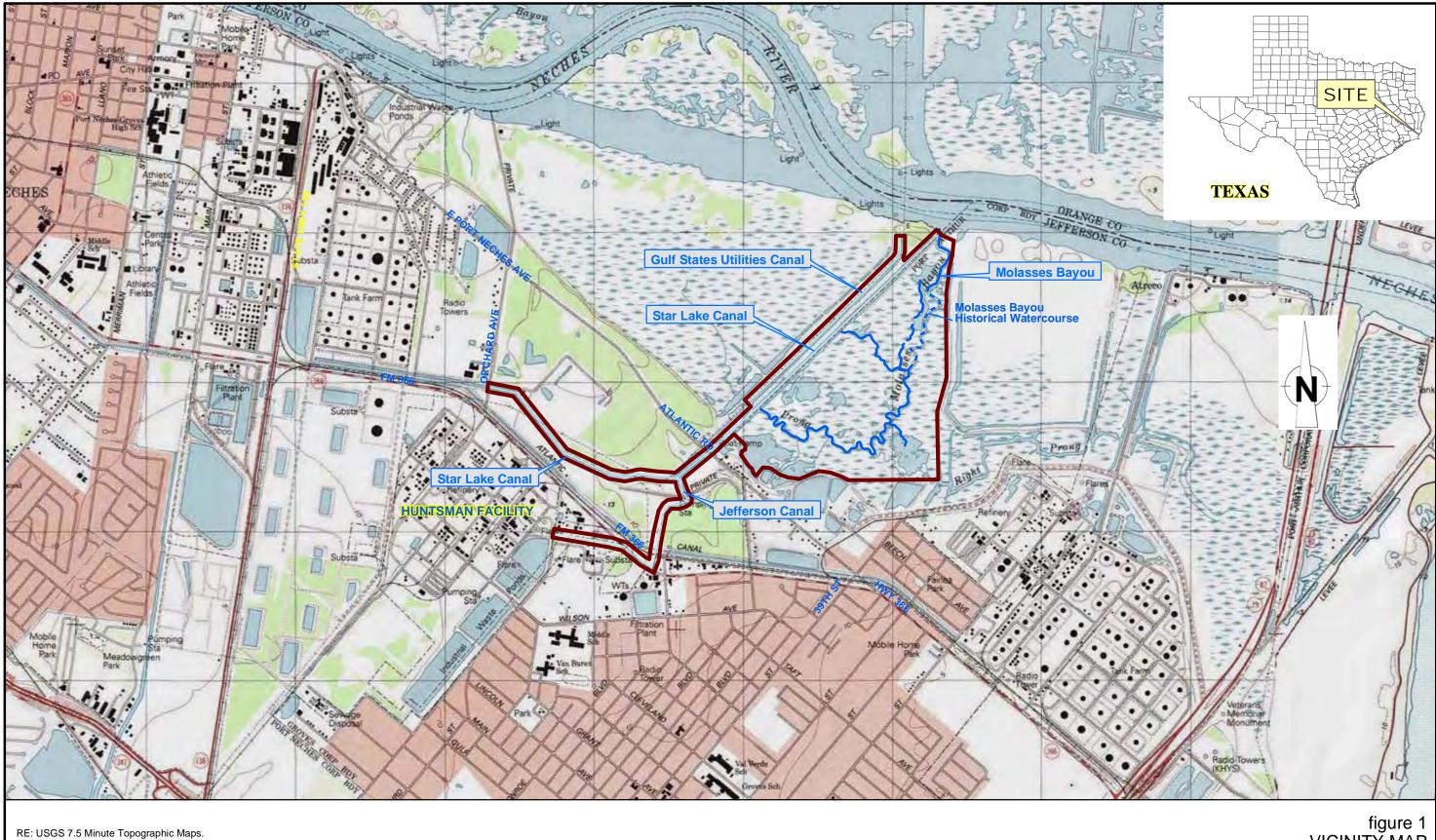
9

All of Which is Respectfully Submitted, CONESTOGA-ROVERS & ASSOCIATES

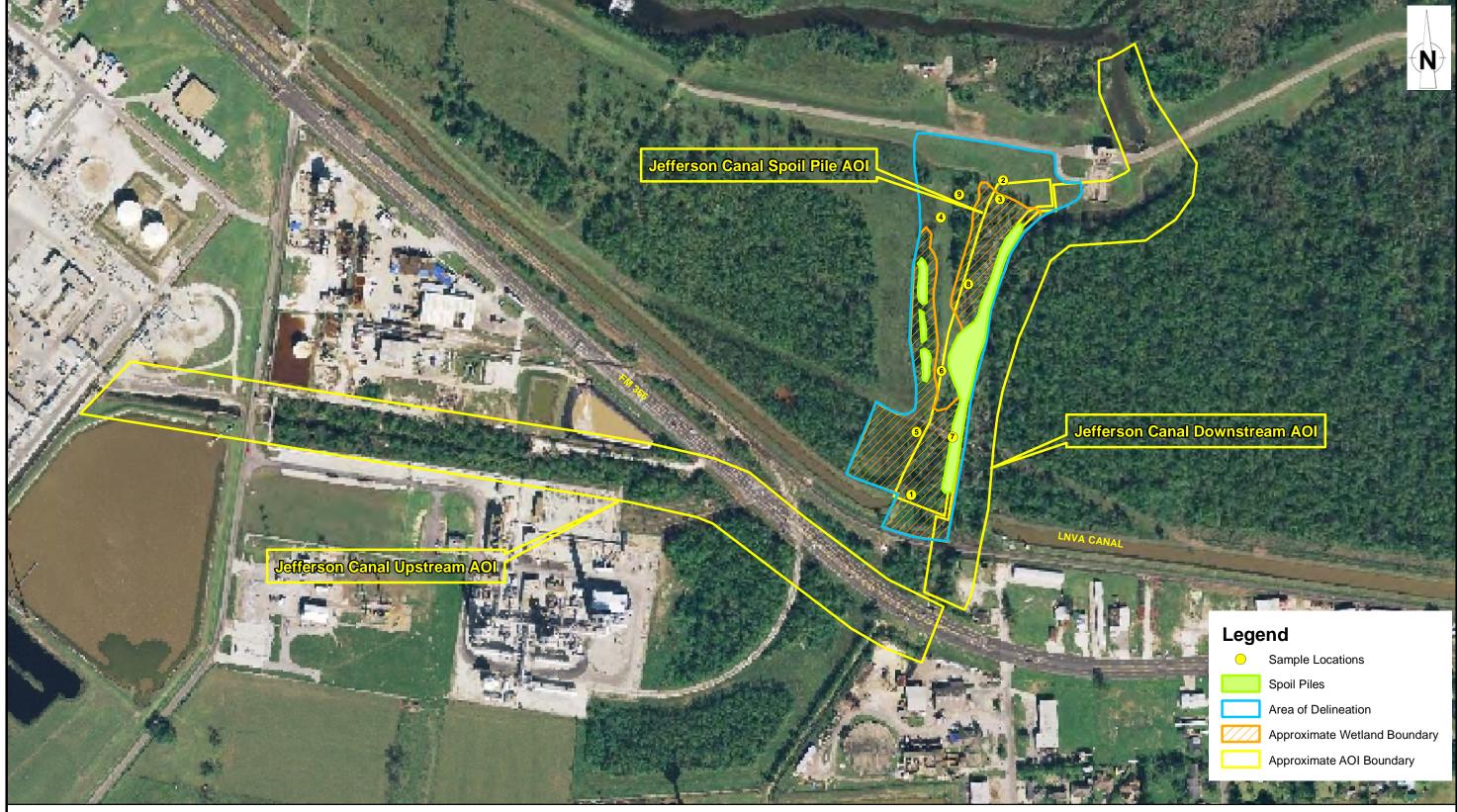
Pressley L. Campbell, PhD
Texas PE 76931
6/11/09

FIGURES

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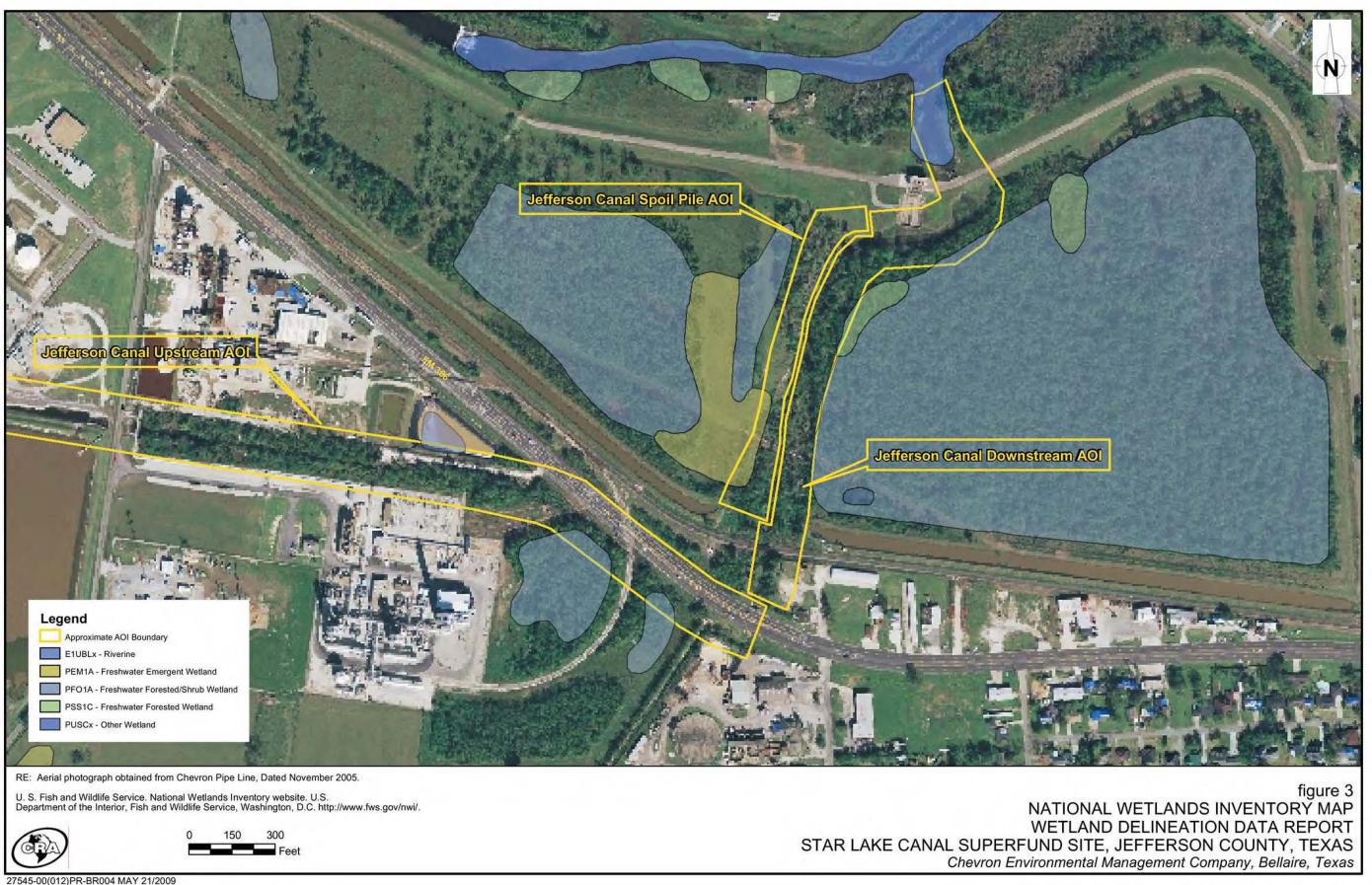


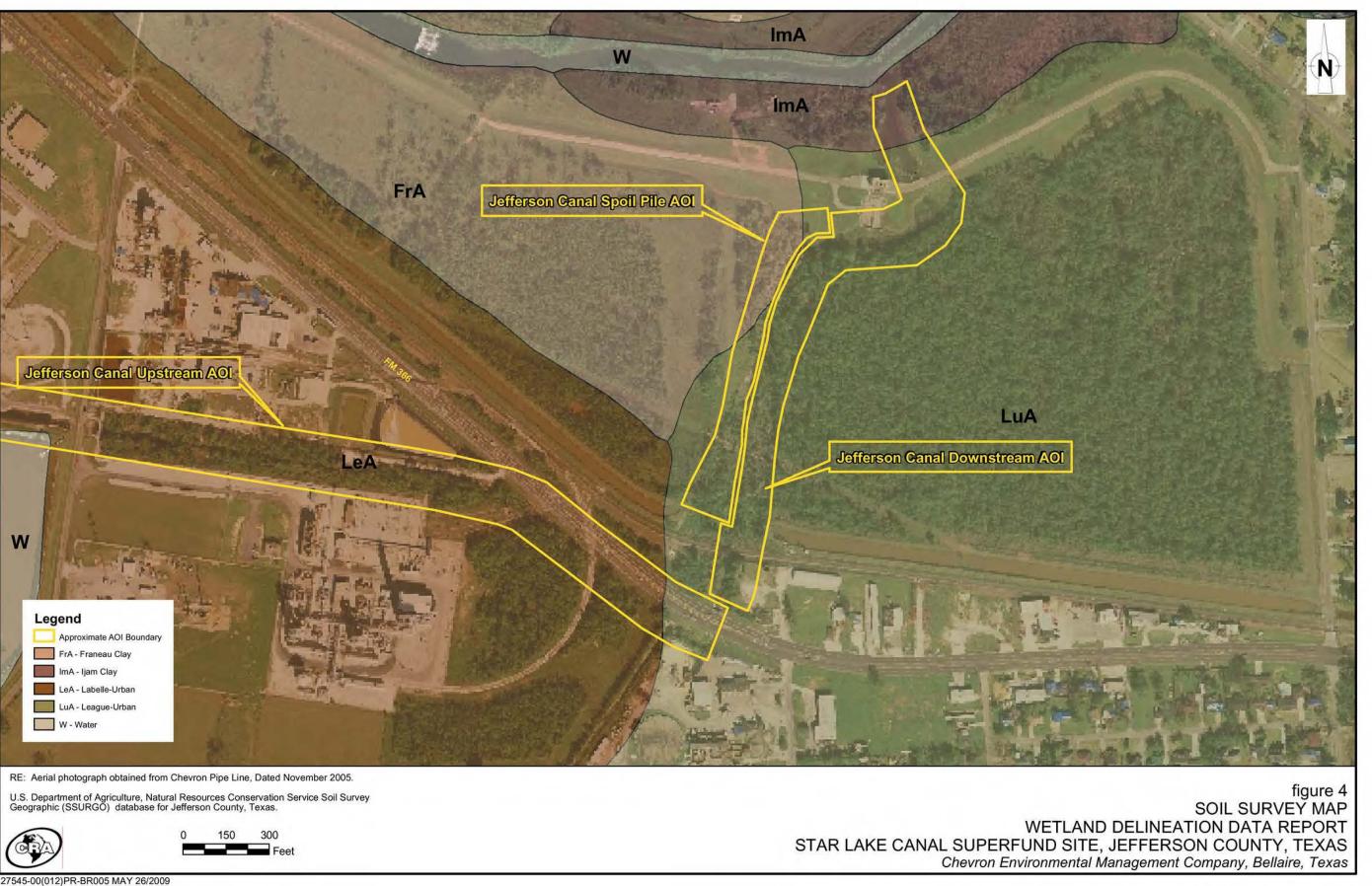
0 1,000 2,000 Feet figure 1 VICINITY MAP WETLAND DELINEATION DATA REPORT STAR LAKE CANAL SUPERFUND SITE, JEFFERSON COUNTY, TEXAS Chevron Environmental Management Company, Bellaire, Texas



RE: AERIAL PHOTOGRAPH OBTAINED FROM CHEVRON PIPELINE, DATED NOVEMBER 2005.

0 150 300 Feet figure 2
WETLAND DELINEATION AREA
WETLAND DELINEATION DATA REPORT
STAR LAKE CANAL SUPERFUND SITE, JEFFERSON COUNTY, TEXAS
Chevron Environmental Management Company, Bellaire, Texas





APPENDIX A

ROUTINE WETLAND DETERMINATION DATA FORMS

027545-00 (12)

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Canal Superfu	und Site / Jefferson Ca	nal_City/County: Por	t Neches / Jeffersc	n Sampling Date:	04/08/09				
Applicant/Owner:	Chevron Environme	ntal Management (Company	State: T	X Sampling Point:	1				
Investigator(s):	Brandon L. Owens	s / Matt D. Brown	Section, Township, Ran	ige:						
Landform (hillslope,	terrace, etc.):	rainage Basin	Local relief (concave, co	onvex, none): Slo	pe	Slope (%): 2				
Subregion (LRR or M	MLRA): LRR T	Lat: N	29° 57' 48.11"	Long: W 93° 55' 0	6.87" Datum:	WGS84				
Soil Map Unit Name	: League-Urb	an land complex		NWI C	Classification:					
Are climate/hydrolog	gic condtions on the sit	te typical for this time	of year? Yes	s X No	(If no, explain in Re	marks)				
Are Vegetation	N Soil N or	Hydrology N sig	nificantly disturbed? Are	e "Normal Circumstand	ces" present? Yes	X No				
Are Vegetation	N Soil N or	Hydrology N na	turally problematic? (If needed, explain any	answers in Remarks.)					
SUMMARY OF	FINDINGS - Attac	ch site map show	wing sampling point l	ocations, transec	ts, important feat	ures, etc.				
Hydrophytic Vegetat	ion Present? Y	'es X No			-					
Hydric Soil Present?	Y	es X No	Is the Sampled Area	Yes X	(No					
Wetland Hydrology I	Present? Y	es X No	within a Wetland?							
Remarks:										
Southeastern po	rtion of AOI									
HYDROLOGY										
Wetland Hydrology	Indicators			Secondary I	ndicators (minimum of t	wo required)				
, ,,	minimum of one is requ	uired; check all that a	(ylqq		ace Soil Cracks (B6)					
Surface Water	•	•	ined Leaved (B9)		rsely Vegetated Concave S	urface (B8)				
High Water Ta			auna (B13)		nage Patterns (B10)					
Saturation (A3			sits (B15) (LRR U)		s Trim Lines (B16)					
Water Marks (lfide Odor (C1) Dry-Season Water Table (C2)						
Sediment Dep	•			izospheres on Living Roots (C3) X Crayfish Burrows (C8)						
Drift Deposits			of Reduced Iron (C4)	′ ′	Saturation Visible on Aerial Imagery (C9)					
Algal Mat or C			n Reduction in Tilled Soils (c6)		Geomorphic Position (D2)					
Iron Deposits			Surface (C7)		Shallow Aquitard (D3					
	ible on Aerial Imagery (B7		plain in Remarks)		-Neutral Test (D5)					
	ible off floridi imagery (b)	Other (EX	nam in Romano,		1100tiai 100t (20)					
Field Observations	•									
Surface Water Prese		No X	Depth (inches)							
Water Table Presen		No X	Depth (inches)	Wetland Hydrolog	y Present? Yes	X No				
Saturation Present?	Yes	No X	Depth (inches)		_					
(includes capillary fr										
		nonitoring well serial	photos, previous inspections	s) if available:						
Describe Recorded	Jaia (Stream gaage, m	nomioning wen, denai	priotos, provious irispections	o), ii avallabio.						
Remarks:										
Kemarks.										
4										

VEGETATION - Use scientific names of plants.

Sampling Point	1	
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Tree Stratum	n (Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
	<u>ı </u>	40	Y	FACW+	Number of Dominant Species		
	us rubra	25	<u> </u>	FACU+	That Are OBL, FACW, or FAC:		(A)
	ium sebiferum	15	N	FACU	That Ale OBL, FACW, of FAC.		(A)
	is occidentalis	15	N	FAC	. Total Number of Dominant		
		15		FAC			(D)
6.					Species Across All Strata:		(B)
				-	. Dracent of Deminent Creeks		
7		95	Tatal Cause		Precent of Dominant Species		(A /D)
Caulina Ctuat	(Dist size)	95	= Total Cove	er Er	That Are OBL, FACW, or FAC:		(A/B)
Sapling Strat	_ ` <u></u>	20	V	EACIL	Prevalence Index worksheet:		
	ium sebiferum is occidentalis	30 10	<u>Y</u>	FACU+ FAC	•	Marie de la laca	
	is occidentalis	10	<u>r</u>	FAC	Total % Cover of:	Multiply by:	
3.				-	OBL species	x1 =	-
4				-	FACW species	x2 =	-
					FAC species	x3 =	-
					FACU species	x4 =	_
7					UPL species	x5 =	
		40	= Total Cove	er	Column Totals:	(A)	(B)
Shrub Statur				0.01			
	codendron vernix	60	<u>Y</u>	OBL	Prevalence Index = B/A =		-
	decidua	20	<u>Y</u>	FACW-			
3. <u> Ilex</u>	vomitoria	10	N	FAC-	Hydrophytic Vegetation Indicat	ors:	
4					Dominance Test is >50%		
5					Prevalence Index is <3.01	4	
6					Problematic Hydrophytic \	/egetation1 (Explain)	
7.					. [,		
		90	= Total Cove	er	¹ Indicators of hydric soil and wetla	and hydrology must	
Herb Stratum					be present, unless distrubed or pr	roblematic.	
	scus moscheutos	40	<u> </u>	OBL	Definitions of Vegetation Strata	1 :	
2. Rub	us trivialis	30	Υ	FAC	.		
	garia virginiana	10	N	FAC	Tree - Woody plants, excluding w	oody vines,	
4. Trifo	olium repens	10	N	FACU+	approximately 20 ft (6 m) or more	in height and 3 in.	
5.					(7.6 cm) or larger in diameter at b	reast height (DBH).	
6.							
7.					Sapling - Woody plants, excluding	ig woody vines,	
8.					approximately 20 ft (6 m) or more	in height and less	
9.					than 3 in. (7.6 cm) DBH.		
10.							
11.					Shrub - Woody plants, excluding	woody vines,	
12.					approximately 3 to 20 ft (1 to 6 m) in height.	
		90	= Total Cove	er			
Woody Vine	Statum (Plot size:)				Herb - All herbaceous (non-wood	ly) plants, including	
1.					herbaceous vines, regardless of s	size. Includes woody	
2.					plants, except woody vines, less t	than approximately	
3.					3 ft (1 m) in height.		
4.							
5.					Woody vine - All woody vines, re	gardless of height.	
			= Total Cove	er	·	- 5	
Remarks: (If	observed, list morphological adaptation	ons below).					
(, <u></u>				Hydrophatic		
					Vegetation		
					Present? Yes	Y No	

SOIL Sampling Point:

Profile Descrip	otion: (Descrie to	the depth ne	eded to documen	t the indic	ator or cnfirm	the absenc	e of indicators.)						
Depth Matrix			Redox	Features		_							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks					
0-8	10 YR 4/1	70	10 YR 3/6	5	D	М	F, F						
	10 YR 4/2	30											
8"+	10 YR 3/1	100	10 YR 4/6	7	D	М	C, F, D						
					1								
						1							
¹ Type: C=Cond	centration, D=Deple	etion, RM=R	educed Matrix, CS=	Covered o	r Coated Sand	l Grains.	² Location: PL=Pore	Lining, M=Matrix					
Hydric Soil	Indicators:					Indicators	for Problematic Hyd	ric Soils³:					
Historol (Polyvalue Bo	elow Surface	e (S8) (LRR S, T,	U)	1 cm Muck (A9)	(LRR O)					
	pedon (A2)		Thin Dark S	urface (S9) (LRR S, T, U)		2 cm Muck (A1	0) (LRR S)					
Black Hist			Loamy Muck		· · · · · ·			(F18) (outside MLRA 150A,B)					
	Sulfide (A4)		Loamy Gley					dplain Soils (F19) (LRR P, S, T)					
	_ayers (A5)		X Depleted Ma	· ·	,			ght Loamy Soils (F(20)					
	odies (A6) (LRR P, T,	U)	Redox Dark	. ,)		(MLRA 153B)	, , , , , , , , , , , , , , , , , , , ,					
	ky Mineral (A7) (LRR I	-	Depleted Da				Red Parent Ma	terial (TF2)					
	sence (A8) (LRR U)		Redox Depr	,	•			ark Surface (TF-12) (LRR T, U)					
	k (A9) (LRR P, T)		Marl (F10) (I			Other (Explain							
	Below Dark Surface (A	\11)	Depleted Oc	hric (F11) (N	/ILRA 151)			,					
	s Surface (A12)	,		Iron-Manganese Masses (F12) (LRR O, P, T) 3Indicators of hydrophytic vegetation and									
	irie Redox (A16) (MLR	RA 150A)	Umbric Surfa			. ,		ogy must be present,					
	cky Mineral (S1) (LRR	-	Delta Ochric				-	d or problematic.					
	eyed Matrix (S4)	. ,			LRA 150A, 150E	3)							
Sandy Re					ls (F19) <u>(MLRA 1</u>	-							
Stripped N				-	/ Soils (F20) (ML	•	C, 153D)						
	face (S7) (LRR P,	S, T, U)		,	· · · · · · · · ·								
	, , ,	, , ,											
Restrictive La	yer (If observed):												
Type:						Hydric Soi	il Present? Yes	_Y_ No					
Depth (Ir	nches):		_										
Remarks:						•							

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake C	anal Supe	erfund S	Site / Je	ffersor	Canal	City/County:	Port N	leche	s / Jeffe	erson	Sampli	ng Date:	04/08/0)9
Applicant/Owner:	Chevron	Enviror	nment	al Ma	nage	ment	Company			State:	TX	Sampli	ng Point:	2	
Investigator(s):	Brandon	L. Owe	ns / N	/latt D	. Bro	wn	Section, Townshi	p, Range	e:		-				
Landform (hillslope	, terrace, etc	c.):	Drain	age B	asin		Local relief (conc	ave, con	vex, no	ne):	Slope			Slope (%):	10
Subregion (LRR or	MLRA):	LRR 7	Γ		Lat:	N 29°	57' 59.25"		Long:	W 93°	55' 03.82	"	Datum:	WGS8	4
Soil Map Unit Nam	e: Fra	aneau c	lay, 0	to 1 9	% slo	pes, c	ccassionally fl	ooded	_	N	WI Class	ification:	Partially h	ydric	
Are climate/hydrolo	gic condtion	s on the	site typ	oical for	this ti	me of y	ear?	Yes	Х	No	([If no, ex	olain in Rer	marks)	
Are Vegetation	N Soil	N	or Hydi	rology	Ν	signific	antly disturbed?	Are "	Norma	- I Circums	stances"	oresent?	Yes	X No	
Are Vegetation	N Soil	Y	or Hydi	rology	N	- natura	lly problematic?	(If	needed	l, explain	any ansv	wers in R	emarks.)		
SUMMARY OF	FINDING	S - Att	ach s	ite ma	ap sł	nowin	g sampling po	oint loc	ation	s, tran	sects,	import	ant featu	ıres, etc.	
Hydrophytic Vegeta			Yes		No	Χ									
Hydric Soil Present	1?		Yes	NA	No		Is the Sampled	Area		Yes		No	Х		
Wetland Hydrology			Yes		No	X	within a Wetland								
, 0,			•		•										
Remarks:															
Fielded area so	outh of pur	np stati	on roa	ad											
HYDROLOGY															
	v Indicator									Second	ary Indica	ators (mi	nimum of ty	vo required)	
Wetland Hydrology Indicators Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)															
Surface Water				,			Leaved (B9)				•		Concave Su	ırface (B8)	
High Water 1	, ,		•		•	c Fauna	, ,				• •	Patterns (
Saturation (A			•				(B15) (LRR U)				Moss Trin		•		
Water Marks	•		•	Hydrogen Sulfide Odor (C1)						Dry-Season Water Table (C2)					
Sediment De	` '		•								Crayfish Burrows (C8)				
Drift Deposits			,	Oxidized Rhizospheres on Living Roots (C3)											
Algal Mat or			•	Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (c6)						Saturation Visible on Aerial Imagery (C9)					
			i		•			s (co)		Geomorphic Position (D2)					
Iron Deposits			(DZ)		•		face (C7)			Shallow Aquitard (D3 FAC-Neutral Test (D5)					
inundation v	isible on Aeria	i imagery ((D7)		Other	(Explain	in Remarks)			-	FAC-Neu	ıraı resi (i	J5)		
Field Observation															
Field Observation		Voo		No	V		Donth (inches)								
Surface Water Pres		Yes _		NO		-	Depth (inches)		\.\.\.		- I D.	10	V	N.	v
Water Table Prese		Yes _		No	X	-	Depth (inches)		wetia	ina Hyar	ology Pr	esent?	Yes _	No	<u> </u>
Saturation Present		Yes		No	X	-	Depth (inches)		-						
(includes capillary f								\	., .,						
Describe Recorded	Data (strea	m gauge	, monit	oring w	ell, ae	erial pho	otos, previous insp	ections),	if availa	able:					
Remarks:															
Dry field															

VEGETATION - Use scientific names of plants.

Sampling Point	2
Sampling Fount	

Tree Stratum	(Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test workshee	ıt:	
1.	`					Number of Dominant Species	S	
2.						That Are OBL, FACW, or FA		(A)
3.								
4.						Total Number of Dominant		
						Species Across All Strata:		(B)
						. December Demisses Consider	_	
7.				= Total Cove	<u> </u>	Precent of Dominant Species That Are OBL, FACW, or FA		(A/B)
Sapling Stratum	(Plot size:)		= Total Cove	1	That Ale OBL, I ACVV, OF I A		(A/b)
	(1 101 3120.					Prevalence Index workshee	et:	
						Total % Cover of:	Multiply by:	
0						OBL species	x1 =	
4						FACW species	x2 =	
_						FAC species		
•						FACU species	4	
7.						UPL species	x5 =	
-				= Total Cove	r	Column Totals:	(A)	(B)
Shrub Statum	(Plot size:)						(-/
1.						Prevalence Index = B	3/A =	_
3						Hydrophytic Vegetation Inc		
1						Dominance Test is >		
-						Prevalence Index is <		
6						·	<u>-</u> 5.5 nytic Vegetation ¹ (Explain	1)
7.					1		, , , , , , , , , , , , , , , , , , , ,	,
-				= Total Cove	r	Indicators of hydric soil and	wetland hydrology must	
Herb Stratum	(Plot size:)				be present, unless distrubed	or problematic.	
	phrum secundatum		90	Υ	FAC+	Definitions of Vegetation S		
	n repens		30	Y	FACU+	.		
	cordum bivalve		30	Y	FAC	Tree - Woody plants, excludi	ing woody vines,	
4. Taraxac	cum officinale		10	N	FACU+	approximately 20 ft (6 m) or i	more in height and 3 in.	
5. Fragaria	a virginiana		10	N	FAC	(7.6 cm) or larger in diameter	r at breast height (DBH).	
6. Baptisia	tinctoria		5	N	FAC			
7.		, ,				Sapling - Woody plants, exc	luding woody vines,	
8.						approximately 20 ft (6 m) or i	more in height and less	
9.						than 3 in. (7.6 cm) DBH.		
10.								
11.						Shrub - Woody plants, exclu	ıding woody vines,	
12						approximately 3 to 20 ft (1 to	6 m) in height.	
			175	= Total Cove	r			
Woody Vine State	um (Plot size:)				Herb - All herbaceous (non-v	woody) plants, including	
1						herbaceous vines, regardles	s of size. Includes wood	ly
2.						plants, except woody vines, l	less than approximately	
3					1	3 ft (1 m) in height.		
4.						.		
5.						Woody vine - All woody vine	es, regardless of height.	
				= Total Cove	r			
Remarks: (If obse	erved, list morphological ad	daptatio	ns below).					
						Hydrophatic		
						Vegetation		
						Present? Yes	No	X
						1		

SOIL Sampling Point: 2

Profile Descrip	tion: (Descrie to tl	ne depth ne	eded to documen	t the indica	ator or enfirm	the absence	of indicators.)					
Depth	Matrix	(Redox F	eatures							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks				
0-20"	Spoil Mix 2/1											
			·									
			·									
¹ Type: C=Conc	entration, D=Deple	tion, RM=Re	duced Matrix, CS=	Covered or	Coated Sand	l Grains.	² Location: PL=Por	e Lining, M=Matrix				
Hydric Soil	Indicators:					Indicators f	or Problematic Hye	dric Soils³:				
Historol (A			Polyvalue Be	elow Surface	(S8) (LRR S, T,	1 cm Muck (As	9) (LRR O)					
Histic Epip	edon (A2)		Thin Dark S	urface (S9) (L	RR S, T, U)	2 cm Muck (A	10) (LRR S)					
Black Histic			Loamy Muck	ky Mineral (F1)(LRR 0)	Reduced Verti	c (F18) (outside MLRA 150A,B)					
	Sulfide (A4)			ed Matric (F2)				odplain Soils (F19) (LRR P, S, T)				
Stratified L			Depleted Ma	` '				ight Loamy Soils (F(20)				
	odies (A6) (LRR P, T, U	J)		Surface (F6)			(MLRA 153B)	• • • • • •				
5 cm Muck	y Mineral (A7) (LRR P	, T, U)	Depleted Da	rk Surface (F	7)		Red Parent Ma	aterial (TF2)				
Muck Pres	ence (A8) (LRR U)		Redox Depr	essions (F8)			Very Shallow I	Dark Surface (TF-12) (LRR T, U)				
1 cm Muck	(A9) (LRR P, T)		Marl (F10) (I	_RR U)			Other (Explain	in Remarks)				
Depleted B	Below Dark Surface (A	11)	Depleted Oc									
Thick Dark	Surface (A12)		Iron-Mangar	nese Masses	(F12) (LRR O, P	³ Indicators of I	nydrophytic vegetation and					
Coast Prair	rie Redox (A16) (MLR	A 150A)	Umbric Surfa	ace (F13) (LR	R P, T, U)	wetland hydrology must be present,						
Sandy Muc	cky Mineral (S1) (LRR	O, S)	Delta Ochric	(F17) (MLRA	151)	unless disturb	ed or problematic.					
Sandy Gle	yed Matrix (S4)		Reduced Vertic (F18) (MLRA 150A, 150B)									
Sandy Red	lox (S5)		Piedmont Floodplain Soils (F19) (MLRA 149A)									
Stripped M	atrix (S6)		Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)									
Dark Surf	face (S7) (LRR P, S	s, T, U)										
Restrictive Lay	ver (If observed):											
Type:						Hydric Soil	Present? Yes	s No _X_				
Depth (In	ches):		•									
	•											
Remarks:						•						
1												
Ì												

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Car	nal Supe	erfund	Site / Je	fferson	Canal	City/County:	Port N	Neche	eches / Jefferson Sampling Date:					09
Applicant/Owner:	Chevron E	nviro	nmen	tal Ma	nage	ment (Company			State	: TX	Sampli	ng Point:	3	
Investigator(s):	Brandon L	. Owe	ns / N	√att D	. Brov	wn	Section, Townsh	ip, Range	e:						
Landform (hillslope	, terrace, etc.):	Drain	age B	asin		Local relief (cond	ave, con	vex, no	ne):	Slope			Slope (%)	: 2
Subregion (LRR or	MLRA):	LRR :	Т		Lat:	N 29°	57' 57.94"		Long:	W 93°	55' 03.88	3"	Datum:	WGS8	4
Soil Map Unit Name	e: Fran	neau c	clay, () to 1 9	% slo	pes, o	ccassionally fl	ooded		1	NWI Class	sification:	Partially h	ydric	
Are climate/hydrolo	gic condtions	on the	site ty	pical for	this ti	me of y	ear?	Yes	Х	No		(If no, ex	plain in Rer	marks)	
Are Vegetation	N Soil	Ν	or Hyc	Irology	Ν	signific	antly disturbed?	Are "	'Norma	- I Circum	stances"	present?	Yes	X No	
Are Vegetation	N Soil	N	or Hyd	Irology	N	natural	ly problematic?	(If	needed	l, explaii	n any ans	wers in R	emarks.)		
SUMMARY OF			-			•	• •	,			•		,	ıres, etc.	
Hydrophytic Vegeta			Yes	Х	No					,	,				
Hydric Soil Present			Yes	Х	No		Is the Sampled	Area		Yes	X	No			
Wetland Hydrology			Yes	Х	No		within a Wetland								
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					•										
Remarks:															
Southeastern p	ortion of A	OI													
μ															
HYDROLOGY															
Wetland Hydrolog	v Indicators									Secon	dary Indic	ators (mi	nimum of ty	wo required)	
Primary Indicators (-	one is re	eauirea	d: check	all tha	at apply)					Soil Cracks			
X Surface Water	`			.,			Leaved (B9)	•		-	_		Concave Su	ırface (B8)	
High Water T				X	•	c Fauna				X		Patterns (
X Saturation (A					•		B15) (LRR U)			$\frac{X}{X}$	_	m Lines (B	•		
X Water Marks	•				•		de Odor (C1)			Dry-Season Water Table (C2)					
Sediment De	,				• -	_	spheres on Living R	oots (C3)							
Drift Deposits					•		educed Iron (C4)	00is (C3)	,						
					•			s (c6)	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)						
Algal Mat or (•		duction in Tilled Soil	S (CO)			_				
Iron Deposits			(DZ)		•		ace (C7)			X	_	Aquitard (D			
X Inundation Vi	sible on Aerial	imagery	(D7)		Other	(Explain	in Remarks)				_ FAC-Net	ıtral Test ([J5)		
Field Observation									T						
Surface Water Pres		Voc	V	No			Depth (inches)	1-6"							
Water Table Preser		Yes		- No					Wetle	nd Uvd	rology B	rocont?	Voc	X No	
		Yes	V	No No	X	•	Depth (inches)		vvelia	ша пуа	rology P	esentr	Yes _	X No	
Saturation Present?		Yes	Х	- No		•	Depth (inches)		1						
(includes capillary f						مامراني	*i		:6:1	-1-1					
Describe Recorded	Data (Stream	i gauge	e, moni	toring w	reii, ae	nai pno	ios, previous irisp	ections),	ıı avalı	able.					
Damada															
Remarks:															
\\/ata= i= =it 4".															
Water in pit 4"+															

VEGETATION - Use scientific names of plants.

Sampling Point	3

	Absolute	Dominant	Indicator		
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:	
1. Salix nigra	30	Y	FACW+	Number of Dominant Species	
2. Acer rubrum ssp. Drummondii	25	Y	FACW	That Are OBL, FACW, or FAC:	(A)
3. Sapium sebiferum	10	N	FACU+		-
4. Celtis occidentalis	5	N	FAC	Total Number of Dominant	
5. Fraxinus pennsylvanica	5	N	FACW-	Species Across All Strata:	(B)
6.				· · · · · · · · · · · · · · · · · · ·	• ` ′
7.				Precent of Dominant Species	
	75	= Total Cove	r	That Are OBL, FACW, or FAC:	(A/B)
Sapling Stratum (Plot size:)		= 10tal 00v0	'	That the OBE, I NOW, OI I NO.	(/ (/ 15)
1.				Prevalence Index worksheet:	
				•	
2				Total % Cover of: Multiply by:	
3				OBL species x1 =	
4				FACW species x2 =	
5				FAC species x3 =	
6				FACU species x4 =	_
7				UPL species x5 =	-
		= Total Cove	r	Column Totals: (A)	(B)
Shrub Statum (Plot size:)					
1. Myrica cerifera	15	Y	FAC+	Prevalence Index = B/A =	_
2. Acer rubrum ssp. Drummondii	10	Υ	FACW		_
3.				Hydrophytic Vegetation Indicators:	
4.				Dominance Test is >50%	
5.				Prevalence Index is ≤3.0 ¹	
				Problematic Hydrophytic Vegetation ¹ (Explain)	
7.					
··	25	= Total Cove	<u> </u>	¹ Indicators of hydric soil and wetland hydrology must	
Herb Stratum (Plot size:)		= 10tal 00vc	1	be present, unless distrubed or problematic.	
Alternanthera philoxeroides	40	Υ	OBL	Definitions of Vegetation Strata:	
2. Hydrocotyle umbellata	10	<u>i</u>	OBL	Definitions of Vegetation Strata.	
	10	N	OBL	Tree Weeds plants evaluating weeds vines	
			FACW+	Tree - Woody plants, excluding woody vines,	
4. Andropogon glomeratus	10	N	FACVV+	approximately 20 ft (6 m) or more in height and 3 in.	
5				(7.6 cm) or larger in diameter at breast height (DBH).	
6					
7				Sapling - Woody plants, excluding woody vines,	
8				approximately 20 ft (6 m) or more in height and less	
9				than 3 in. (7.6 cm) DBH.	
10					
11				Shrub - Woody plants, excluding woody vines,	
12.				approximately 3 to 20 ft (1 to 6 m) in height.	
	70	= Total Cove	r		
Woody Vine Statum (Plot size:				Herb - All herbaceous (non-woody) plants, including	
1.				herbaceous vines, regardless of size. Includes woody	
2.				plants, except woody vines, less than approximately	
3.				3 ft (1 m) in height.	
4.					
5.				Woody vine - All woody vines, regardless of height.	
·		= Total Cove	<u> </u>	The same of the sa	
Remarks: (If observed, list morphological adaptat	ione holow)	- 10tal COVE	1		
ntemarks. (ii observed, iist morphological adaptat	ons below).			Hydrophotic	
				Hydrophatic	
				Vegetation	
				Present? Yes Y No	

SOIL Sampling Point: 3

Profile Descrip	otion: (Descrie to	the depth ne	eeded to documen	t the indic	ator or cnfirm	the absence	of indicators.)	
Depth	Matr	ix	_	Redox F	eatures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10 YR 4/1	100						
8"+	10 YR 5/1	100						
					,			
					-			
Type: C=Cond	centration, D=Depl	etion, RM=R	educed Matrix, CS=	:Covered or	Coated Sand	Grains.	² Location: PL=Por	e Lining, M=Matrix
	Indicators:						or Problematic Hyd	
Historol (A-1)		Polyvalue Be	elow Surface	(S8) (LRR S, T,	U)	1 cm Muck (A9) (LRR O)
	pedon (A2)		Thin Dark Su	urface (S9) (L	.RR S, T, U)		2 cm Muck (A1	0) (LRR S)
Black Hist			Loamy Muck		· · · · ·			c (F18) (outside MLRA 150A,B)
	Sulfide (A4)		Loamy Gleye					dplain Soils (F19) (LRR P, S, T)
	_ayers (A5)		X Depleted Ma	,	,			ght Loamy Soils (F(20)
	odies (A6) (LRR P, T,	U)	Redox Dark				(MLRA 153B)	gin Eddiny Collo (1 (20)
	ky Mineral (A7) (LRR	-	Depleted Da		7)		Red Parent Ma	sterial (TE2)
	sence (A8) (LRR U)	. , ., •,	Redox Depre		,			Dark Surface (TF-12) (LRR T, U)
	(A9) (LRR P, T)		Marl (F10) (L				Other (Explain	, ,,
	Below Dark Surface (۸11\	Depleted Oc		I DA 151)		Other (Explain	iii Keinaiks)
	•	411)	 ·	· , ,	(F12) (LRR O, P	т\	3Indicators of h	ydrophytic vegetation and
	(Surface (A12)	24 1504)				, ')		
	irie Redox (A16) (MLF		Umbric Surfa		· · · · ·		· ·	ogy must be present,
	cky Mineral (S1) (LRF	(0, 5)	Delta Ochric		-		unless disturbe	ed or problematic.
	eyed Matrix (S4)				.RA 150A, 150B	-		
Sandy Re					s (F19) <u>(MLRA 1</u>		= .	
Stripped N			Anomalous E	Bright Loamy	Soils (F20) (ML	RA 149A, 153C,	<u>153D)</u>	
Dark Sui	face (S7) (LRR P,	S, T, U)						
Restrictive La	yer (If observed):							
Type:	,					Hydric Soil	Present? Yes	_Y_ No
Depth (Ir	nches):		_			'		
	,							
Remarks:						1		

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Car	nal Superfund	Site / Jeffe	rson Canal	City/County:	Port Ne	ort Neches / Jefferson Sampling Date: 04/					
Applicant/Owner:	Chevron E	nvironmen	tal Man	agement	Company		State: TX	Sampling Point:	4			
Investigator(s):	Brandon L	Owens / I	Matt D. I	3rown	Section, Township	o, Range:						
Landform (hillslope,	terrace, etc.): Drair	nage Ba	sin	Local relief (conca	ave, conve	x, none): Slope		Slope (%): 10			
Subregion (LRR or	MLRA):	LRR T		Lat: N 29°	57' 58.07"	L	ong: W 93° 55' 06.50	Datum:	WGS84			
Soil Map Unit Name	: <u>Fr</u> ar	neau clay, (to 1 %	slopes, o	occassionally flo	ooded	NWI Clas	sification: Partially I	nydric			
Are climate/hydrolog	gic condtions	on the site ty	pical for th	nis time of y	ear?	Yes	X No	(If no, explain in Re	emarks)			
Are Vegetation	N Soil	N or Hyd	drology	N signific	cantly disturbed?	Are "No	ormal Circumstances"	present? Yes	X No			
Are Vegetation	N Soil	N or Hyd	drology	N natura	lly problematic?	(If ne	eded, explain any ans	wers in Remarks.)				
SUMMARY OF	FINDINGS	S - Attach	site ma	showin	g sampling po	int loca	tions, transects,	important feat	ures, etc.			
Hydrophytic Vegeta	tion Present?	? Yes		No X								
Hydric Soil Present	?	Yes		No X	Is the Sampled A	rea	Yes	No X				
Wetland Hydrology	Present?	Yes		No X	within a Wetland	?						
					1							
Remarks:												
Agricultural Fiel	d West of	Jefferson C	anal									
HYDROLOGY												
Wetland Hydrolog	y Indicators						Secondary Indic	ators (minimum of t	two required)			
Primary Indicators (minimum of o	one is require	d; check a	II that apply	')		Surface	Soil Cracks (B6)				
Surface Wate	r (A1)	•	W	ater-Stained	Leaved (B9)		Sparsely	Vegetated Concave S	Surface (B8)			
High Water T	able (A2)		A	quatic Fauna	(B13)		Drainage	Patterns (B10)				
Saturation (A	3)		M	arl Deposits	(B15) (LRR U)		Moss Tri	m Lines (B16)				
Water Marks	(B1)		——	ydrogen Sulf	ide Odor (C1)		Dry-Seas	son Water Table (C2)				
Sediment Dep	oosits (B2)			-	ospheres on Living Ro	oots (C3)		Burrows (C8)				
Drift Deposits					educed Iron (C4)	,		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or 0					eduction in Tilled Soils	s (c6)		Geomorphic Position (D2)				
Iron Deposits				nin Muck Sur		. ,	Shallow Aquitard (D3					
<u> </u>	sible on Aerial	Imagery (B7)			in Remarks)		FAC-Neutral Test (D5)					
		3,7(,)		()	,			,				
Field Observations	 3:											
Surface Water Pres		Yes	No	Х	Depth (inches)							
Water Table Preser		Yes	No _	X	Depth (inches)	v	Vetland Hydrology P	resent? Yes	No X			
Saturation Present?		Yes	No _	X	Depth (inches)		,	-				
(includes capillary fi					- (
Describe Recorded		n gauge, mon	itorina wel	I. aerial pho	otos, previous inspe	ections), if	available:					
	(33	3	,	,	-,,						
Remarks:												
i tomamer												
Dry field												
Dry noid												

VEGETATION - Use scientific names of plants.

Sampling Point	4	
orksheet:		
t Species		

Tree Stratum	(Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test workshe	et:		
1.	(. 101 0.20.					Number of Dominant Speci			
2						That Are OBL, FACW, or F.			(A)
3.									• ` ′
4.						Total Number of Dominant			
5.						Species Across All Strata:			(B)
6									
7.						Precent of Dominant Specie	es		
				= Total Cove	r	That Are OBL, FACW, or F.			(A/B)
Sapling Stratum	(Plot size:)							• ` ′
1.						Prevalence Index worksh	eet:		
						Total % Cover of:	<u>M</u> ı	ultiply by:	
2						OBL species	x1 =		
4						FACW species	x2 =		
_						FAC species	x3 =		•
•						FACU species	x4 =		
7.						UPL species	x5 =		
				= Total Cove	r	Column Totals:	(A)		(B)
Shrub Statum	(Plot size:)					` ´ -		. ` ′
1.						Prevalence Index =	B/A =		•
3				-		Hydrophytic Vegetation II	ndicators:		
1						Dominance Test is:			
						Prevalence Index is			
6						Problematic Hydrop		n ¹ (Evolain)	
7.						1 Toblematic Hydrop	Trylic vegetatio	ii (Explaiii)	
7.				= Total Cove		Indicators of hydric soil and	d wetland hydr	alogy must	
Llorb Ctrotum	(Diet eizer	, -		= Total Cove	1	•			
Herb Stratum	(Plot size:	<u> </u>	90	Υ	EAC.	be present, unless distrube		C.	
	phrum secundatum		20	<u> </u>	FAC+ FACU+	Definitions of Vegetation	Strata:		
2. Trifolium	ordum bivalve		20	<u> </u>	FACU+	. Tree Weady plants evalu	dina woody via		
	um officinale				FACU+	Tree - Woody plants, exclu	-		
			10	N 	FAC	approximately 20 ft (6 m) o	•		
	virginiana		30 5			(7.6 cm) or larger in diamet	er at breast nei	ignt (DBH).	
6. Rubus ti	IVIAIIS		<u> </u>	<u>N</u>	FAC	. Carlina Washindanta a			
7.						Sapling - Woody plants, ex			
8.						approximately 20 ft (6 m) of	r more in neign	t and less	
9.						than 3 in. (7.6 cm) DBH.			
10.						·[
11.						Shrub - Woody plants, exc	-		
12			475			approximately 3 to 20 ft (1 t	to 6 m) in heigh	it.	
			175	= Total Cove	r				
Woody Vine Statu		<u> </u>			<u></u>	Herb - All herbaceous (non		_	
	osis arborea		10	<u> </u>	FAC	herbaceous vines, regardle		•	
						plants, except woody vines	, less than appr	roximately	
-						3 ft (1 m) in height.			
4						.			
5			40		-	Woody vine - All woody vir	nes, regardless	of height.	
			10	= Total Cove	r				
Remarks: (If obse	erved, list morphological a	daptatio	ns below).						
						Hydrophatic			
						Vegetation			
						Present? Ye	<u></u>	No	<u> </u>

SOIL Sampling Point: 4

Profile Descrip	otion: (Descrie to	the depth ne	eded to documen	t the indic	ator or cnfirm	the absence	of indicators.)	
Depth	Matr	rix		Redox	Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6"	10 YR 4/2	100						
6"+	10 YR 2/1	100						
	· ·				-			
	 ·				· ———			
	· ·				. ———			
	· ——				-			
1= 0.0						•	2	
		etion, RM=R	educed Matrix, CS=	Covered o	r Coated Sand		² Location: PL=Pore	
Hydric Soil	Indicators:						or Problematic Hyd	
Historol (A	\ -1)				(S8) (LRR S, T,	U)	1 cm Muck (A9)	(LRR O)
Histic Epip	edon (A2)		Thin Dark Su	urface (S9) (LRR S, T, U)		2 cm Muck (A1	0) (LRR S)
Black Hist	ic (A3)		Loamy Muck	y Mineral (F	1) (LRR O)		Reduced Vertic	(F18) (outside MLRA 150A,B)
Hydrogen	Sulfide (A4)		Loamy Gleye	ed Matric (F2	2)		Piedmont Floor	Iplain Soils (F19) (LRR P, S, T)
Stratified L	ayers (A5)		Depleted Ma	trix (F3)			Anomalous Brig	tht Loamy Soils (F(20)
Organic B	odies (A6) (LRR P, T,	, U)	Redox Dark	Surface (F6))		(MLRA 153B)	
5 cm Mucl	ky Mineral (A7) (LRR	P, T, U)	Depleted Da	rk Surface (I	=7)		Red Parent Ma	terial (TF2)
Muck Pres	sence (A8) (LRR U)		Redox Depre		,		Very Shallow D	ark Surface (TF-12) (LRR T, U)
	(A9) (LRR P, T)		Marl (F10) (L				Other (Explain	, , , , , ,
	Below Dark Surface (A	Δ11)	Depleted Oc	-	ILRA 151)			
	Surface (A12)	((1))			(F12) (LRR O, P	T)	³ Indicators of b	ydrophytic vegetation and
	irie Redox (A16) (MLF	ΡΛ 150Λ)	Umbric Surfa			-,		-
		-					-	ogy must be present,
	cky Mineral (S1) (LRF	(0, 3)	Delta Ochric		-		uniess disturbe	d or problematic.
	eyed Matrix (S4)				LRA 150A, 150B			
Sandy Red					s (F19) (MLRA 1	•		
Stripped M			Anomalous E	Bright Loamy	Soils (F20) (MLF	<u>RA 149A, 153C,</u>	<u>153D)</u>	
Dark Sur	face (S7) (LRR P,	S, T, U)						
Restrictive Lav	yer (If observed):							
Type:	, (,.					Hydric Soil	Present? Yes	No _X_
Depth (Ir	nches).		_			,		
Deptii (ii								
Remarks:								
Nemaiks.								
I								

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superl	fund Site /	Jefferso	n Canal	City/County:	Port N	Neches / Jefferson Sampling Date:					04/08/09	
Applicant/Owner:	Chevron Er	nvironme	ental Mai	nageme	nt Com	npany			State: TX Sampling Point: 5					
Investigator(s):	Brandon L	Owen	s / Matt	D. Bro	wn	Section, Township	p, Range	э:						
Landform (hillslope	, terrace, etc.): <u>D</u>)rainage	Basin		Local relief (conca	ave, con	vex, no	ne):	Slope			Slope (%):	2
Subregion (LRR or	MLRA):	LRR T		Lat	N 29°	57' 50.75"		Long:	W 93°	55' 07.08	3"	Datum:	WGS84	
Soil Map Unit Nam	e: <u>Lea</u>	gue-Urk	oan land	comp	lex				ı	NWI Class	sification	: Not hydric	:	
Are climate/hydrolo	ogic condtions	on the si	ite typical	for this t	ime of y	ear?	Yes	Χ	No		(If no, ex	xplain in Rer	narks)	
Are Vegetation	N Soil	N o	r Hydrolog	gy N	signific	antly disturbed?	Are '	'Norma	l Circum	nstances"	present	? Yes	X No	
Are Vegetation	N Soil	N 01	r Hydrolog	gy N	natura	lly problematic?	(If	needed	l, explai	n any ans	wers in	Remarks.)		
SUMMARY OF	FINDINGS	S - Atta	ch site	map s	- howin	g sampling po	oint lo	cation	s, trai	nsects,	impor	tant featu	res, etc.	
Hydrophytic Vegeta	ation Present	? `	Yes X	. No										
Hydric Soil Present	t?	`	Yes X	. No		Is the Sampled A	Area		Yes	X	No			
Wetland Hydrology	Present?	`	Yes X	. No		within a Wetland	l?							
						1								
Remarks:														
HYDROLOGY														
Wetland Hydrolog	y Indicators								Secon	dary Indic	ators (m	ninimum of tw	vo required)	
Primary Indicators			quired; che	eck all th	at apply	·)				Surface S	Soil Crack	(s (B6)		
X Surface Wat	,					Leaved (B9)				Sparsely	Vegetate	ed Concave Su	ırface (B8)	
High Water					ic Fauna	(B13)				 Drainage	-			
X Saturation (A						(B15) (LRR U)				Moss Tri				
Water Marks				Hydro	gen Sulfi	de Odor (C1)				_		r Table (C2)		
Sediment De	` '		-		_	spheres on Living Ro	oots (C3)		Crayfish Burrows (C8)					
Drift Deposit				Presence of Reduced Iron (C4)						Saturation Visible on Aerial Imagery (C9)				
Algal Mat or						eduction in Tilled Soils	s (c6)		Geomorphic Position (D2)					
Iron Deposits			-				()		Shallow Aquitard (D3					
 .	isible on Aerial	Imagery (B	37)	Thin Muck Surface (C7) Other (Explain in Remarks)						X FAC-Neutral Test (D5)				
				_	(,						()		
Field Observation	is:													
Surface Water Pres		Yes	X No)		Depth (inches)	1-4"							
Water Table Prese		Yes	X No		_	Depth (inches)	14"	Wetla	nd Hvd	rology P	resent?	Yes	X No	
Saturation Present		Yes	X No		_	Depth (inches)	2"+		•	0,		_		
(includes capillary					_	/.								
Describe Recorded		n gauge. i	monitorin	g well. a	erial pho	otos, previous insp	ections).	if availa	able:					
	(J J ,	,	, . ,		,	,							
Remarks:														
Water in pit 14"	' +													

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet: Number of Dominant Species	
2					That Are OBL, FACW, or FAC:	(A)
4. 5.					Total Number of Dominant Species Across All Strata:	(B)
7.			Tatal O		Precent of Dominant Species	(4 /5)
Sapling Stratum (Plot size:)		= Total Cove	er	That Are OBL, FACW, or FAC:	(A/B)
Sapium sebiferum	<u> </u>	15	Y	FACU+	Prevalence Index worksheet:	
2.						<u>fultiply by:</u>
3.					OBL species x1 =	
4					FACW species x2 =	
5					FAC species x3 =	
6						
7					UPL species x5 =	
			= Total Cove	er	Column Totals: (A)	(B)
Shrub Statum (Plot size:					Prevalence Index = B/A =	
3.					Hydrophytic Vegetation Indicators:	
4.					Dominance Test is >50%	
					Prevalence Index is ≤3.0 ¹	
6		·			Problematic Hydrophytic Vegetation	on ¹ (Explain)
7.					·	` ' /
			= Total Cove	er	Indicators of hydric soil and wetland hydronic	rology must
Herb Stratum (Plot size:)		. 514. 5511		be present, unless distrubed or problema	
Cyperus virens		30	Υ	FACW	Definitions of Vegetation Strata:	
2. Hydrocotyle umbellata		20	<u> </u>	OBL		
3. Eleocharis macrostachya		15		OBL	Tree - Woody plants, excluding woody vir	nes
4. Juncus effusus		15	N	OBL	approximately 20 ft (6 m) or more in heigh	
5. Rubus trivialis		10		OBL	(7.6 cm) or larger in diameter at breast he	
6.					(7.0 cm) of larger in diameter at breast ne	ight (DBH).
7.					- Sapling - Woody plants, excluding woody	y vines,
8.				-	approximately 20 ft (6 m) or more in heigh	ht and less
9.					than 3 in. (7.6 cm) DBH.	
10.					-	
11.					Shrub - Woody plants, excluding woody	vines,
12.					approximately 3 to 20 ft (1 to 6 m) in heig	
		90	= Total Cove	er	-	
Woody Vine Statum (Plot size:)				Herb - All herbaceous (non-woody) plants	s. includina
1.					herbaceous vines, regardless of size. Inc	-
2					plants, except woody vines, less than app	•
3					3 ft (1 m) in height.	
4.						
5.					- Woody vine - All woody vines, regardles:	s of height
J			= Total Cove		- Noody vine All woody vines, regardless	3 of ficigrit.
Remarks: (If observed, list morphologica	l adantati	ons helow)	- 10tai 00V	· ·	+	
ivemarks. (ii observed, list morphologica	ι αυαριαιι	ons below).			Hydrophatic Vegetation	
					Present? Yes Y	No

SOIL Sampling Point: 5

_	-	_	eded to documen			the absence	e of indicators.)	
Depth	Matr		<u> </u>	Redox F		12	·	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-20"	10 YR 4/1	100	10 YR 5/8	10	D	M	Clay Loam	
							. 	
							·	
_								
							·	
Type: C=Cond	entration, D=Deple	etion, RM=Re	educed Matrix, CS=	Covered or	Coated Sand	Grains.	² Location: PL=Pore	Lining, M=Matrix
Hydric Soil	Indicators:					Indicators	for Problematic Hydi	ric Soils³:
Historol (A	N-1)		Polyvalue Be	elow Surface	(S8) (LRR S, T,	J)	1 cm Muck (A9)	(LRR O)
Histic Epip	•		Thin Dark Su			•	2 cm Muck (A10	
Black Histi			Loamy Muck		· · · · · ·			(F18) (outside MLRA 150A,B)
			Loamy Gleye	-	• •			plain Soils (F19) (LRR P, S, T)
	Sulfide (A4)			,	1			
Stratified L		11)	X Depleted Ma					ht Loamy Soils (F(20)
	odies (A6) (LRR P, T,		Redox Dark	, ,	_,		(MLRA 153B)	
	xy Mineral (A7) (LRR I	P, 1, U)	Depleted Da	-	7)		Red Parent Mat	, ,
	ence (A8) (LRR U)		Redox Depre					ark Surface (TF-12) (LRR T, U)
1 cm Muck	(A9) (LRR P, T)		Marl (F10) (L	.RR U)			Other (Explain in	n Remarks)
Depleted E	Below Dark Surface (A	A11)	Depleted Oc	hric (F11) (M	LRA 151)		_	
Thick Dark	Surface (A12)		Iron-Mangan	ese Masses	(F12) (LRR O, P	T)	³ Indicators of hy	drophytic vegetation and
Coast Prai	rie Redox (A16) (MLR	RA 150A)	Umbric Surfa	ace (F13) (LR	R P, T, U)		wetland hydrolo	gy must be present,
Sandy Mud	cky Mineral (S1) (LRR	R O, S)	Delta Ochric	(F17) (MLR	151)		unless disturbed	d or problematic.
Sandy Gle	yed Matrix (S4)		Reduced Ve	rtic (F18) (ML	.RA 150A, 150B)		
Sandy Red	dox (S5)		Piedmont Flo	odplain Soils	s (F19) <u>(MLRA 14</u>	19A <u>)</u>		
Stripped M	latrix (S6)		Anomalous E	Bright Loamy	Soils (F20) (MLF	RA 149A, 153C	<u>, 153D)</u>	
Dark Sur	face (S7) (LRR P,	S, T, U)						
Restrictive Lay	ver (If observed):							
Type:						Hydric Soi	Present? Yes	_Y_ No
Depth (In	ches):		_					
	,							
Remarks:								

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superfun	d Site / Je	efferson	Canal	City/County:	Port N	Neche	s / Jefferson	ng Date:	04/08/09		
Applicant/Owner:	Chevron E	Environme	ental Ma	anage	ment	Company			State: TX	6			
Investigator(s):	Brandon L	Owens	/ Matt D). Brov	wn	Section, Township	o, Range	e:					
Landform (hillslope	, terrace, etc.): <u>Dra</u>	ainage E	Basin		Local relief (conca	ave, con	vex, no	ne): Slope)		Slope (%):	2
Subregion (LRR or	MLRA):	LRR T		Lat:	N 29°	57' 58.07"		Long:	W 93° 55' 06.5	0"	Datum:	WGS84	
Soil Map Unit Nam	e: Lea	gue-Urba	n land	comple	ex			'	NWI Clas	sification:	Not hydric		
Are climate/hydrolo	ogic condtions	on the site	typical fo	r this ti	me of y	rear?	Yes	Х	No	(If no, exp	olain in Rem	narks)	
Are Vegetation	N Soil	N or H	lydrology	Ν	signific	cantly disturbed?	Are "	'Norma	l Circumstances	present?	Yes	X No	
Are Vegetation	N Soil	Y or H	lydrology	N	natura	lly problematic?	(If	needed	l, explain any an	swers in R	emarks.)		
SUMMARY OF	FINDINGS	S - Attach	site m	ap sh	owin	g sampling po	int lo	cation	s, transects	importa	ant featu	res, etc.	
Hydrophytic Vegeta	ation Present	? Ye	s	No	Χ								
Hydric Soil Present	t?	Ye	s	No	X	Is the Sampled A	Area		Yes	No	X		
Wetland Hydrology	Present?	Ye	s	No	X	within a Wetland	!?			_			
-						1							
Remarks:						•							
Area between s	spoil piles												
HYDROLOGY													
Wetland Hydrolog	v Indicators								Secondary Indi	cators (mir	nimum of tw	o required)	
Primary Indicators	-		red: chec	k all tha	at apply	<i>(</i>)				Soil Cracks		- · · · · · · · · · · · · · · · · · · ·	
Surface Wat	,					Leaved (B9)					Concave Sui	rface (B8)	
High Water				_	c Fauna	, ,				e Patterns (I		(20)	
Saturation (A				_		(B15) (LRR U)				im Lines (B	· ·		
Water Marks	•					de Odor (C1)				son Water	·		
Sediment De	` '				-	ospheres on Living Ro	nots (C3)		Crayfish Burrows (C8)				
Drift Deposit			-			educed Iron (C4)	0013 (00)		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or						eduction in Tilled Soils	: (c6)		Geomorphic Position (D2)				
Iron Deposits						face (C7)	, (00)		Shallow Aquitard (D3				
	isible on Aerial	Imagen/ (B7)				in Remarks)			FAC-Neutral Test (D5)				
inundation v	ISIDIE UN AEMAI	illiagely (br)		_ Other (Lxpiaiii	iii Keillaiks)			I AO-NE	uliai Tesi (L	,3)		
Field Observation	· · ·												
Surface Water Pres		Yes	No	X		Denth (inches)							
Water Table Prese		Yes	— No	X	•	Depth (inches)		Wotla	ınd Hydrology F	Procent?	Yes	No	х
Saturation Present		Yes	— No	X	•	Depth (inches)		1	ilia riyarology i	resent:			
(includes capillary		163	140		•	Deptil (iliches)		1					
Describe Recorded		o gougo mo	nitoring	woll ao	rial pha	otos, provious insp	actions)	if avail	ablo:				
Describe Recorded	Dala (Sileali	ii gauge, iiic	niitoring v	well, ae	nai pric	nos, previous irispi	ections),	II avaii	able.				
Remarks:													
Remarks.													
Dr. field													
Dry field													

Tree Stratum	(Plot size:	Absolute) % Cover	Dominant Species?	Indicator Status	Dominance Test workshee	t:	
1.					Number of Dominant Species	S	
					That Are OBL, FACW, or FA	.C:	(A)
3. 4.				-	Total Number of Dominant		
					Species Across All Strata:		(B)
6. 7.					Precent of Dominant Species	s	
			= Total Cove	er	That Are OBL, FACW, or FA		(A/B)
Sapling Stratum 1. Sapium S	(Plot size:	<u>)</u> 20	Υ	FACU+	Prevalence Index workshee		
_			·	171001	Total % Cover of:	Multiply by:	
			-		OBL species		
4					FACW species		_
					TACi	x2 =	_
				-	EACH		_
7.					UPL species		_
7.			= Total Cove		Column Totals:	x5 =	— _(D)
01 1 01 1	(DI		= Total Cove	er	Column Totals:	(A)	(B)
^	(Plot size:				Prevalence Index = B	//A =	_
2					Hydrophytic Vegetation Inc	dicators:	
4			·		Dominance Test is >	50%	
E					Prevalence Index is <	<u><</u> 3.0 ¹	
6						ytic Vegetation ¹ (Explain))
7.					110 dia 24 ana 26 haada'a 22 laad		
	(D)	· —	= Total Cove	er	¹ Indicators of hydric soil and	·	
Herb Stratum	(Plot size:	<u>)</u>		540	be present, unless distrubed	•	
	hrum secundatum	75	<u>Y</u>	FAC+	Definitions of Vegetation S	trata:	
2. Trifolium		20	Y	FACU+	.		
	ordum bivalve	20	Υ	FAC	Tree - Woody plants, excludi		
4. Taraxacı	um officinale	10	N	FACU+	approximately 20 ft (6 m) or r	-	
	virginiana	30	Y	FAC	(7.6 cm) or larger in diameter	r at breast height (DBH).	
6. Rubus tr	ivialis	5	N	FAC	_		
7.					Sapling - Woody plants, exc	luding woody vines,	
8.					approximately 20 ft (6 m) or i	more in height and less	
9.					than 3 in. (7.6 cm) DBH.		
10.					1		
11.					Shrub - Woody plants, exclu	ıding woody vines,	
12.					approximately 3 to 20 ft (1 to		
-		160	= Total Cove	er	· · · · · · · · · · · · · · · · · · ·	, 0	
Woody Vine Statu	m (Plot size:)	-		Herb - All herbaceous (non-v	woody) plants, including	
1	· · · · · · · · · · · · · · · · · · ·				herbaceous vines, regardless		v
			-		plants, except woody vines, I		,
2					3 ft (1 m) in height.	coo than approximately	
			·		- Sit (1 iii) iii neigiit.		
4					- NAC and a series and a series and a series and		
5			= Total Cove		- Woody vine - All woody vine	ss, regardless of neight.	
Domarka: (If about	avad list marphalagical ada		= 10tal Cove	<u> </u>			
Remarks: (If obser	rved, list morphological ada	iptations below).					
					Hydrophatic		
					Vegetation		
					Present? Yes	No	X
L							

_	-		eeded to documen		ator or cnfirm	the absence	of indicators.)	
Depth (inches)	Matri		Color (maint)		Type ¹	Loc ²	Toyeteen	Domortes
(inches)	Color (moist)	%	Color (moist)	%	Туре	LOC	Texture	Remarks
0-20"	10 YR 2/1	40						
	Spoil	60						
					· -			
					•			
					· -			
					· 			
		etion, RM=R	educed Matrix, CS=	Covered o	r Coated Sand		² Location: PL=Pore	
łydric Soil∃	Indicators:					Indicators f	or Problematic Hyd	ric Soils³:
Historol (A	N-1)		Polyvalue Be	elow Surface	(S8) (LRR S, T,	U)	1 cm Muck (A9	(LRR 0)
Histic Epip	edon (A2)		Thin Dark Su	ırface (S9) (I	RR S, T, U)		2 cm Muck (A1	0) (LRR S)
Black Histi			Loamy Muck	v Mineral (F	1) (LRR O)		Reduced Vertic	(F18) (outside MLRA 150A,B)
	Sulfide (A4)		Loamy Gleye					Iplain Soils (F19) (LRR P, S, T)
Stratified L				•	· <i>)</i>			ght Loamy Soils (F(20)
		110	Depleted Ma					gin Loanly Sons (F(20)
	odies (A6) (LRR P, T,		Redox Dark	` '			(MLRA 153B)	(750)
	xy Mineral (A7) (LRR F	۶, ۱, ۷)	Depleted Da	-	-7)		Red Parent Ma	` ,
Muck Pres	ence (A8) (LRR U)		Redox Depre				Very Shallow D	ark Surface (TF-12) (LRR T, U)
1 cm Muck	(A9) (LRR P, T)		Marl (F10) (L	.RR U)			Other (Explain	n Remarks)
Depleted B	Below Dark Surface (A	(11)	Depleted Oc	hric (F11) (M	ILRA 151)			
Thick Dark	Surface (A12)		Iron-Mangan	ese Masses	(F12) (LRR O, P	, T)	³ Indicators of h	drophytic vegetation and
Coast Prair	rie Redox (A16) (MLR	A 150A)	Umbric Surfa	ace (F13) (LF	RR P, T, U)		wetland hydrolo	ogy must be present,
Sandy Muc	cky Mineral (S1) (LRR	O, S)	Delta Ochric	(F17) (MLR	A 151)		unless disturbe	d or problematic.
Sandy Gle	yed Matrix (S4)		Reduced Ve	rtic (F18) (M I	LRA 150A, 150B)		·
Sandy Red					s (F19) <u>(MLRA 1</u>			
				-	Soils (F20) (MLI	•	153D)	
Stripped M Dark Surf	face (S7) (LRR P, 5	S. T. U)	7 tilomaious L	ongin Loamy	OOII3 (1 20) <u>(IVILI</u>	(/ 	<u> 1000 j</u>	
Restrictive Lay	ver (If observed):							
Type:			_			Hydric Soil	Present? Yes	No _X_
Depth (In	ches):							
Remarks:								
/latrix = 60%	4 Spoil							
//atrix = 00 /	о Орон							

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Car	nal Superfund	Site / Jeffe	rson Canal	City/County:	Port N	leches / Je	fferson	Sampling Da	ate:	04/08/0	9	
Applicant/Owner:	Chevron E	nvironmen	tal Mana	gement	Company		Stat	e: TX	Sampling Po	oint:	7		
Investigator(s):	Brandon L	Owens / I	Matt D. E	Brown	Section, Townsh	ip, Range:	<u> </u>						
Landform (hillslope	, terrace, etc.): Drair	nage Bas	sin	Local relief (cond	cave, conv	ex, none):	Slope			Slope (%):	2	
Subregion (LRR or	MLRA):	LRR T	ļ	_at: N 29°	57' 57.94"		Long: W 93	3° 55' 03.88	3" Dat	tum:	WGS84		
Soil Map Unit Name	e: <u>Lea</u>	gue-Urban	land cor	nplex				NWI Class	sification: Not	hydric			
Are climate/hydrolo	gic condtions	on the site ty	pical for th	is time of y	/ear?	Yes	X No		(If no, explain	in Rema	rks)		
Are Vegetation	N Soil	N or Hyd	drology	N signifi	cantly disturbed?	Are "N	Normal Circu	mstances"	present? Ye	es X	(No		
Are Vegetation	N Soil	Y or Hyd	drology	N natura	Illy problematic?	(If n	needed, expla	in any ans	wers in Rema	rks.)			
SUMMARY OF	FINDINGS	S - Attach	site map	showin	ng sampling p	oint loc	ations, tra	insects,	important 1	feature	s, etc.		
Hydrophytic Vegeta	ation Present?	Yes	X ı	No									
Hydric Soil Present	:?	Yes	NA I	No	Is the Sampled	Area	Yes	s <u>X</u>	No				
Wetland Hydrology	Present?	Yes	<u>X</u> 1	No	within a Wetlan	d?							
Remarks:					1								
0-20" = 100% S	Spoil												
HYDROLOGY													
Wetland Hydrolog	y Indicators						Seco	ndary Indic	ators (minimu	m of two	required)		
Primary Indicators	(minimum of o	one is require	d; check a	I that apply	<i>y</i>)	_		Surface	Soil Cracks (B6)				
Surface Water	er (A1)		Xw	X Water-Stained Leaved (B9)					Vegetated Cond	ave Surfa	ce (B8)		
High Water T	able (A2)		Ac	uatic Fauna	ı (B13)			Drainage	Patterns (B10)				
Saturation (A	(3)		M	arl Deposits	(B15) (LRR U)			Moss Tri	m Lines (B16)				
X Water Marks	(B1)		H	drogen Sulf	ide Odor (C1)			Dry-Seas	son Water Table	(C2)			
Sediment De	posits (B2)		O	didized Rhize	ospheres on Living F	loots (C3)		Crayfish Burrows (C8)					
Drift Deposits	s (B3)		Pr	esence of R	educed Iron (C4)			Saturation Visible on Aerial Imagery (C9)					
Algal Mat or	Crust (B4)		Re	ecent Iron Re	eduction in Tilled So	ls (c6)		Geomorphic Position (D2)					
Iron Deposits	s (B5)		Tr	in Muck Sur	face (C7)			Shallow Aquitard (D3					
Inundation V	isible on Aerial	magery (B7)	O	her (Explain	in Remarks)		X FAC-Neutral Test (D5)						
Field Observation	s:												
Surface Water Pres	sent?	Yes	No	X	Depth (inches)							
Water Table Prese	nt?	Yes	No	X	Depth (inches))	Wetland Hy	drology P	resent? Ye	es X	No		
Saturation Present	?	Yes	No	X	Depth (inches)							
(includes capillary f	ringe)												
Describe Recorded	l Data (stream	n gauge, moni	toring well	, aerial pho	otos, previous ins	pections), i	if available:						
Remarks:													

Sampling Point	7

	Absolute	Dominant	Indicator		
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:	
1. Salix nigra	20	<u>Y</u>	FACW+	Number of Dominant Species	
2. Sapium sebiferum	10	<u>Y</u>	FACU+	That Are OBL, FACW, or FAC: (A)	
3. Fraxinus pennsylvanica	10	Y	FACW		
4. Celtis occidentalis	5	N	FAC	Total Number of Dominant	
5				Species Across All Strata: (B)	
6.					
7.				Precent of Dominant Species	
	75	= Total Cove		That Are OBL, FACW, or FAC: (A/E	B)
Sapling Stratum (Plot size:)				(,
1. Toxicodendron vernix	60	Υ	OBL	Prevalence Index worksheet:	
		<u> </u>	<u> </u>	Total % Cover of: Multiply by:	
				ODI analisa	
				OBL species x1 =	
4				FACW species x2 =	
5				FAC species x3 =	
6			-	FACU species x4 =	
7			-	UPL species x5 =	
		= Total Cove	er	Column Totals: (A) (B)	
Shrub Statum (Plot size:)					
1. Morus rubra	20	Υ	FACU	Prevalence Index = B/A =	
2.				·	
3.	·			Hydrophytic Vegetation Indicators:	
4	1			Dominance Test is >50%	
5.			-	Prevalence Index is ≤3.0 ¹	
				Problematic Hydrophytic Vegetation ¹ (Explain)	
6	-		-	- Froblematic Hydrophytic vegetation (Explain)	
7					
	20	= Total Cove	er	¹ Indicators of hydric soil and wetland hydrology must	
Herb Stratum (Plot size:)				be present, unless distrubed or problematic.	
1. Solidago arguta	10	N	FACU	Definitions of Vegetation Strata:	
2					
3.				Tree - Woody plants, excluding woody vines,	
4.				approximately 20 ft (6 m) or more in height and 3 in.	
5.				(7.6 cm) or larger in diameter at breast height (DBH).	
6.			-	-	
7.				Sapling - Woody plants, excluding woody vines,	
Ω				approximately 20 ft (6 m) or more in height and less	
0.				- ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	
9.				than 3 in. (7.6 cm) DBH.	
10					
11			-	Shrub - Woody plants, excluding woody vines,	
12				approximately 3 to 20 ft (1 to 6 m) in height.	
	10	= Total Cove	er		
Woody Vine Statum (Plot size:				Herb - All herbaceous (non-woody) plants, including	
(1 lot 6/26	30	Y	FACU	herbaceous vines, regardless of size. Includes woody	
Clematis pitcheri	30			Intents according to the contract to	
Clematis pitcheri				Iplants, except woody vines, less than approximately	
Clematis pitcheri 2.				plants, except woody vines, less than approximately 3 ft (1 m) in height.	
 Clematis pitcheri 3. 				grants, except woody vines, less than approximately 3 ft (1 m) in height.	
 Clematis pitcheri 3. 4. 				3 ft (1 m) in height.	
 Clematis pitcheri 3. 					
1. Clematis pitcheri 2. 3. 4. 5.	30	= Total Cove	er	3 ft (1 m) in height.	
 Clematis pitcheri 3. 4. 	30		er	3 ft (1 m) in height. Woody vine - All woody vines, regardless of height.	
1. Clematis pitcheri 2. 3. 4. 5.	30		er	3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. Hydrophatic	
1. Clematis pitcheri 2. 3. 4. 5.	30		er	3 ft (1 m) in height. Woody vine - All woody vines, regardless of height.	
1. Clematis pitcheri 2. 3. 4. 5.	30		er	3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. Hydrophatic	
1. Clematis pitcheri 2. 3. 4. 5.	30		er	3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. Hydrophatic Vegetation	

_	· ·	_	needed to docume			rm the abser	nce of indicators.)	
Depth (inches)	Matr Color (moist)	%	Color (moist)	Redox F	Type ¹	Loc ²	Texture	Remarks
0-20	Spoil Spoil	100	Color (moist)	/0	Турс		Texture	Remarks
0 20	Орон	100			-			
					-			
Tunai C. Cana	contration D. Donle	otion DM Da	adveced Metrix CC	Covered or	Cooted Cond	Craina	21 acetion, DI Dore	Lining M Matrix
Hydric Soil		elion, Kivi=Ke	educed Matrix, CS=	Covered of	Coaled Sand		² Location: PL=Pore for Problematic Hyd	
-			Daharahia Da	Jan Curfaga	(CO) (I DD C T		_	
Historol (A	•				(S8) (LRR S, T,	u)	1 cm Muck (A9	•
Histic Epip			Thin Dark Su		· · · · · · ·		2 cm Muck (A1	
Black Histi			Loamy Muck					(F18) (outside MLRA 150A,B)
	Sulfide (A4)		Loamy Gleye	-)			dplain Soils (F19) (LRR P, S, T)
Stratified L			X Depleted Ma					ght Loamy Soils (F(20)
	odies (A6) (LRR P, T,		Redox Dark	` '			(MLRA 153B)	
	xy Mineral (A7) (LRR I	P, T, U)	Depleted Da	-	7)		Red Parent Ma	` '
	ence (A8) (LRR U)		Redox Depre					Park Surface (TF-12) (LRR T, U)
	(A9) (LRR P, T)		Marl (F10) (L				Other (Explain	in Remarks)
	Below Dark Surface (A	A11)	Depleted Oc		-	_	a	
	Surface (A12)				(F12) (LRR O, P	, T)	Indicators of h	ydrophytic vegetation and
	rie Redox (A16) (MLF	-	Umbric Surfa	ace (F13) (LR	R P, T, U)		wetland hydrol	ogy must be present,
Sandy Mu	cky Mineral (S1) (LRR	R O, S)	Delta Ochric	(F17) (MLR	A 151)		unless disturbe	d or problematic.
Sandy Gle	yed Matrix (S4)		Reduced Ve	rtic (F18) (ML	.RA 150A, 150B)		
Sandy Red	dox (S5)		Piedmont Flo	oodplain Soils	s (F19) <u>(MLRA 1</u>	<u>49A)</u>		
Stripped M			Anomalous E	Bright Loamy	Soils (F20) (MLI	RA 149A, 153C,	<u>153D)</u>	
Dark Sur	face (S7) (LRR P,	S, T, U)						
Restrictive Lay	ver (If observed):							
Type:						Hydric Soil	Present? Yes	No
Depth (In	ches):		_					
Remarks:						•		

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superfund	Site / Jeffer	son Canal	City/County:	Port N	leches / Je	fferson	Sampling Date:	04/09/09			
Applicant/Owner:	Chevron E	nvironmen	tal Mana	gement	Company		State	e: TX	Sampling Point:	8			
Investigator(s):	Brandon L	Owens / I	Matt D. E	rown	Section, Towns	nip, Range	:		•				
Landform (hillslope	, terrace, etc.): Drair	nage Bas	in	Local relief (con	cave, conv	/ex, none):	Slope		Slope (%): 2			
Subregion (LRR or	MLRA):	LRR T	L	.at: N 29°	57' 56.78"		Long: W 93	° 55' 04.31	" Datum:	WGS84			
Soil Map Unit Name	e: Frai	neau clay, (to 1 %	slopes, o	occassionally	flooded	<u> </u>	NWI Class	sification: Partially	hydric			
Are climate/hydrolo	gic condtions	on the site ty	pical for th	s time of y	/ear?	Yes	X No		(If no, explain in Re	emarks)			
Are Vegetation	N Soil	N or Hyd	drology	V signifi	cantly disturbed?	Are "I	Normal Circur	nstances"	present? Yes	X No			
Are Vegetation	N Soil	Y or Hyd	drology	N natura	ally problematic?	(If n	needed, expla	in any ans	wers in Remarks.)				
SUMMARY OF	FINDINGS	 S - Attach s	site map	showir	ոց sampling բ	oint loc	ations, tra	nsects,	important feat	ures, etc.			
Hydrophytic Vegeta	ation Present	? Yes	X	lo									
Hydric Soil Present	t?	Yes	NA N	lo	Is the Sampled	Area	Yes	Х	No				
Wetland Hydrology	Wetland Hydrology Present? Ye			lo	within a Wetlar	ıd?			·				
Remarks:													
4"+ = 100% Sp	oil												
HYDROLOGY													
Wetland Hydrolog	y Indicators						Secor	ndary Indic	ators (minimum of	two required)			
Primary Indicators	(minimum of	one is required	d; check al	that apply	y)	_		Surface S	Soil Cracks (B6)				
Surface Wate	er (A1)		X Water-Stained Leaved (B9)					Sparsely	Vegetated Concave S	Surface (B8)			
High Water 1	Table (A2)		Aq	uatic Fauna	ı (B13)			Drainage	Patterns (B10)				
Saturation (A	N3)		Ma	rl Deposits	(B15) (LRR U)			Moss Tri	m Lines (B16)				
X Water Marks	(B1)		Ну	drogen Sulf	ide Odor (C1)			Dry-Seas	son Water Table (C2)				
Sediment De	eposits (B2)		Ox	idized Rhiz	ospheres on Living	Roots (C3)		Crayfish Burrows (C8)					
Drift Deposits	s (B3)		Presence of Reduced Iron (C4)					Saturation Visible on Aerial Imagery (C9)					
Algal Mat or	Crust (B4)		Recent Iron Reduction in Tilled Soils (c6)					Geomorphic Position (D2)					
Iron Deposits	s (B5)		Th	in Muck Sui	rface (C7)			Shallow Aquitard (D3					
Inundation V	isible on Aerial	Imagery (B7)	Ot	ner (Explain	in Remarks)		X	X FAC-Neutral Test (D5)					
Field Observation	s:												
Surface Water Pres	sent?	Yes	No	X	Depth (inches	.)							
Water Table Prese	nt?	Yes	No	X	Depth (inches	,)	Wetland Hyd	drology P	resent? Yes	X No			
Saturation Present	?	Yes	No	X	Depth (inches	.)							
(includes capillary f	fringe)												
Describe Recorded	l Data (strean	n gauge, moni	toring well	aerial pho	otos, previous ins	pections), i	if available:						
Remarks:													

Sampling Point 8	8
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Tree	Stratum (Plot size:	Absolute) % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1.	Salix nigra	30	Y	FACW+	Number of Dominant Species		
2.	Fraxinus pennsylvanica		. <u> </u>	FACW	That Are OBL, FACW, or FAC:		(A)
3.	Celtis occidentalis		N	FAC	- Mat Ale OBE, I AOW, OI I AO.	-	_(^)
4.	Cornus drummondii		N	FAC	Total Number of Dominant		
5.	Corrias draminoriai			170	Species Across All Strata:		(B)
6.					- Openes Across Air Strata.		_(D)
7.			· 		Precent of Dominant Species		
′· -			= Total Cove		That Are OBL, FACW, or FAC:		(A/B)
Conli	ng Stratum (Plot size:	/	= Total Cove	3 1	That Are OBL, FACW, or FAC.		_ (A/D)
-	ng Stratum (Plot size: Toxicodendron vernix	<u>)</u>	V	ODI	Dravelen ee ledeu wedenbeet		
1.	Cornus drummondii	<u>25</u> 15	- <u>Y</u> Y	OBL FAC	Prevalence Index worksheet:	NA desarta da com	
2.	Corrus di unimondii	15	·t	FAC	Total % Cover of:	Multiply by:	
3.			· 		OBL species	x1 =	_
4.					FACW species	x2 =	_
5.					FAC species	x3 =	_
6.					FACU species	x4 =	_
7.					UPL species	x5 =	_
		40	= Total Cove	er	Column Totals:	(A)	_ (B)
Shrul	Statum (Plot size:)					
1.	Morus rubra	20	Y	FACU	Prevalence Index = B/A :	=	_
2.	llex vomitoria	10	Υ	FAC-			
3.					Hydrophytic Vegetation Indica	ators:	
4.					Dominance Test is >50%	%	
5.					Prevalence Index is <3.0	O ¹	
6.					Problematic Hydrophytic	C Vegetation ¹ (Explain)	
7.					· 		
-		30	= Total Cove	er	¹ Indicators of hydric soil and we	tland hydrology must	
Herb	Stratum (Plot size:		•		be present, unless distrubed or		
1.	Rubus trivialis	20	Υ	FAC	Definitions of Vegetation Stra	•	
2.	Hibiscus moscheutos	20	<u> Y</u>	OBL	-		
3.	Juncus effusus	10	N	OBL	Tree - Woody plants, excluding	woody vines.	
4.	Hydrocotyle umbellata	10	. <u> </u>	OBL	approximately 20 ft (6 m) or mo	-	
5.	Try droboty to dringonata		· — '\	 	(7.6 cm) or larger in diameter at	-	
6.			· 		(7.0 cm) of larger in diameter at	i bicasi neighi (bbin).	
7.					Sapling - Woody plants, exclud	ling woody vines	
7. 8.					approximately 20 ft (6 m) or mo	•	
-			· 		·	re in height and less	
9.					than 3 in. (7.6 cm) DBH.		
10.					-		
11.		 -			Shrub - Woody plants, excluding	-	
12.					approximately 3 to 20 ft (1 to 6 i	m) in neight.	
		60	= Total Cove	er	l		
	dy Vine Statum (Plot size:				Herb - All herbaceous (non-woo		
1	Clematis pitcheri	30	<u> </u>	FACU	herbaceous vines, regardless o	•	'
2.	Toxicodendron radicans	15	<u> </u>	FAC	plants, except woody vines, less	s than approximately	
3.					3 ft (1 m) in height.		
4.					.		
5.					Woody vine - All woody vines,	regardless of height.	
		45	= Total Cove	er			
Rema	arks: (If observed, list morphological ada	aptations below).	· · · · · · · · · · · · · · · · · · ·				
					Hydrophatic		
					Vegetation		
					Present? Yes	Y No	

Profile Descrip	otion: (Describe to	the depth	needed to docume	nt the indi	cator or confi	rm the abser	nce of indicators.)				
Depth	Matri	X	_	Redox I	eatures						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-4	10 YR 3/1	80						20% Spoil			
4"+	Spoil	90						•			
	·										
					· 						
	· ——				· 						
17	and the Company	de DM D	and the second Marketine CO	0		0	21 1' DI D	Literary NA NASANIA			
		etion, Rivi=R	educed Matrix, CS=	Covered o	r Coated Sand		² Location: PL=Pore				
Hydric Soil							or Problematic Hydi				
Historol (/	A-1)				(S8) (LRR S, T,	J)	1 cm Muck (A9)				
Histic Epip	edon (A2)		Thin Dark Su	ırface (S9) (I	LRR S, T, U)		2 cm Muck (A10) (LRR S)			
Black Hist	ic (A3)		Loamy Muck	y Mineral (F	1) (LRR O)		Reduced Vertic	(F18) (outside MLRA 150A,B)			
Hydrogen	Sulfide (A4)		Loamy Gleye	ed Matric (F2	2)		Piedmont Flood	plain Soils (F19) (LRR P, S, T)			
Stratified I	ayers (A5)		Depleted Ma	trix (F3)			Anomalous Brig	ht Loamy Soils (F(20)			
Organic B	odies (A6) (LRR P, T,	U)	Redox Dark	Surface (F6)			(MLRA 153B)				
5 cm Mucl	ky Mineral (A7) (LRR F	P, T, U)	Depleted Da	rk Surface (F	- 7)		Red Parent Mat	erial (TF2)			
Muck Pres	sence (A8) (LRR U)		Redox Depre	essions (F8)			Very Shallow Da	ark Surface (TF-12) (LRR T, U)			
1 cm Mucl	(A9) (LRR P, T)		Marl (F10) (L				Other (Explain in	n Remarks)			
	Below Dark Surface (A	.11)	Depleted Oc	-	ILRA 151)			,			
	Surface (A12)	,			(F12)(LRR O, P	T)	³ Indicators of hy	drophytic vegetation and			
	irie Redox (A16) (MLR	Δ 150Δ)	Umbric Surfa			wetland hydrology must be present,					
		-			· · · · ·		unless disturbed or problematic.				
	cky Mineral (S1) (LRR	0, 3)	Delta Ochric		-		uniess disturbed	or problematic.			
	eyed Matrix (S4)				LRA 150A, 150B						
Sandy Re	dox (S5)			-	s (F19) <u>(MLRA 1</u>	-					
Stripped N			Anomalous E	Bright Loamy	Soils (F20) (MLF	RA 149A, 153C,	<u>153D)</u>				
Dark Sur	face (S7) (LRR P, S	S, T, U)									
Restrictive La	yer (If observed):										
Type:	, c. (0.000. 100).					Hydric Soil	Present? Yes	No			
Depth (Ir	oches).		_			inyuno con	Tresent. Too				
Deptii (ii											
Remarks:											
Nemaiks.											

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superfund	Site / Jeffe	rson Canal	City/County:	Port N	leches / Jef	ferson	Samplir	ng Date:	04/09/	09		
Applicant/Owner:	Chevron E	nvironmen	tal Mana	agement	Company		State	: TX	Samplin	ng Point:	9			
Investigator(s):	Brandon L	Owens / I	Matt D. E	Brown	Section, Towns	nip, Range:	• •			_				
Landform (hillslope	e, terrace, etc.): Drair	nage Bas	sin	Local relief (con	cave, conv	ex, none):	Slope			Slope (%)	: 2		
Subregion (LRR or	· MLRA):	LRR T		_at: N 29°	° 57' 57.87"		Long: W 93	° 55' 05.19)"	Datum:	WGS8	34		
Soil Map Unit Nam	e: Fra	neau clay, (to 1 %	slopes,	occassionally	flooded		NWI Class	sification:	Partially h	ydric			
Are climate/hydrolo	ogic condtions	on the site ty	pical for th	is time of	year?	Yes	X No		(If no, exp	olain in Rei	marks)			
Are Vegetation	N Soil	N or Hyd	drology	N signifi	cantly disturbed?	Are "۱	Normal Circun	nstances"	present?	Yes	X No			
Are Vegetation	N Soil	N or Hyd	drology	N natura	ally problematic?	(If n	eeded, explai	n any ans	wers in R	emarks.)				
SUMMARY OF	FINDING	S - Attach	site map	showir	ng sampling p	oint loc	ations, tra	nsects,	importa	ant featu	ıres, etc.			
Hydrophytic Vegeta	ation Present	? Yes	ļ	No X										
Hydric Soil Presen	t?	Yes		No X	Is the Sampled	Area	Yes		No	X				
Wetland Hydrology	Present?	Yes	<u> </u>	No X	within a Wetlar	ıd?			·					
Remarks:														
Dry														
HYDROLOGY Wetland Hydrolog	ny Indicators						Secon	dary Indic	ators (min	nimum of t	wo required)			
,			d check a	I that appl	v)				Soil Cracks		iro roquirou)			
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaved (B9)								_		Concave Su	ırface (B8)			
High Water				quatic Fauna	, ,				Patterns (F		211d00 (B0)			
Saturation (A				•	(B15) (LRR U)			_	m Lines (B1	•				
Water Marks	·			•				_	•	•				
Sediment De				Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots (C3)					Dry-Season Water Table (C2) Crayfish Burrows (C8)					
Drift Deposit								Saturation Visible on Aerial Imagery (C9)						
Algal Mat or				Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (c6)					Geomorphic Position (D2)					
Iron Deposits				in Muck Su		113 (00)								
	isible on Aerial	Imagon/(P7)			in Remarks)			Shallow Aquitard (D3 FAC-Neutral Test (D5)						
IIIdildation v	isible on Aeriai	illiagely (B7)		ilei (Expiali	i iii Neillaiks)		-	_ I AC-Net	iliai Test (L	73)				
Field Observation	ns:													
Surface Water Pres	sent?	Yes	No	X	Depth (inches	.)								
Water Table Prese	ent?	Yes	No	X	Depth (inches	,)	Wetland Hyd	Irology P	resent?	Yes _	No	Х		
Saturation Present	?	Yes	No	X	Depth (inches	,)								
(includes capillary	fringe)													
Describe Recorded	d Data (strean	n gauge, moni	toring well	, aerial ph	otos, previous ins	pections), i	if available:							
Remarks:														
No indications	of hydrolog	y present												
	, ,													

Sampling Point	9	

Tree Stratum (Plot size:	Absolute) % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
Celtis occidentalis	65	Y	FAC	Number of Dominant Species	
2. Sapium sebiferum	20	Υ	FACU+	That Are OBL, FACW, or FAC:	(A)
3.					
4.				Total Number of Dominant	
5				Species Across All Strata:	_(B)
6.					
7		T / 10		Precent of Dominant Species	(A (D)
Sapling Stratum (Plot size:	85	= Total Cove	er	That Are OBL, FACW, or FAC:	(A/B)
· · · · · · · · · · · · · · · · · · ·				Prevalence Index worksheet:	
1. 2.				Total % Cover of: Multiply by:	
3				OBL species x1 =	
4.				FACW species x2 =	_
-					_
					-
6. 7.			-		_
1.		= Total Cove			(D)
Shrub Statum (Plot size:		= 10(a) Cov	əı	Column Totals: (A)	_(B)
Shrub Statum (Plot size: 1. <i>Ilex vomitoria</i> 2.		<u> </u>	FAC-	Prevalence Index = B/A =	_
3.				Hydrophytic Vegetation Indicators:	
4.				Dominance Test is >50%	
		· 		Prevalence Index is <3.01	
5. 6.				Problematic Hydrophytic Vegetation ¹ (Explain)	
-				1 Toblematic Hydrophytic Vegetation (Explain)	
7		= Total Cove	or.	Indicators of hydric soil and wetland hydrology must	
Hards Christian (Dist size)		= Total Cove	ei		
Herb Stratum (Plot size: 1. Rubus trivialis		V	EAC	be present, unless distrubed or problematic.	
	20		FAC FAC	Definitions of Vegetation Strata:	
2. Cyperus retrosus		· <u> </u>		The NA/s should not a such alice a suspending a	
3. Trifolium repens	20		FACU+	Tree - Woody plants, excluding woody vines,	
4. Rubus argutus	10	<u> </u>	FACU+	approximately 20 ft (6 m) or more in height and 3 in.	
5. 6.				(7.6 cm) or larger in diameter at breast height (DBH).	
7.				Sapling - Woody plants, excluding woody vines,	
8.		· 		approximately 20 ft (6 m) or more in height and less	
9.				than 3 in. (7.6 cm) DBH.	
10.				than 6 m. (7.6 om) BBM.	
11.		· 		Shrub - Woody plants, excluding woody vines,	
12.		· 		approximately 3 to 20 ft (1 to 6 m) in height.	
12.	75	= Total Cove		approximately 5 to 25 it (1 to 6 iii) iii neight.	
Woody Vine Statum (Plot size:	\	- Total Cove	5 1	Herb - All herbaceous (non-woody) plants, including	
 ,`			FAC	herbaceous vines, regardless of size. Includes woody	
			1 70		
2.		· 		plants, except woody vines, less than approximately	
3.		· 		3 ft (1 m) in height.	
4		· 		Mendu vine All wands since an acceptance of the late	
5		T-1-1-2		Woody vine - All woody vines, regardless of height.	
Demonstra (If the served list as a substant	20	= Total Cove	U I		
Remarks: (If observed, list morphological a	idaptations below).				
				Hydrophatic	
				Vegetation	
				Present? Yes No	X

Profile Descrip	ption: (Describe to	the depth i	needed to docume	nt the ind	cator or confi	rm the abser	nce of indicators.)	
Depth	Matri	х	_	Redox I	eatures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10 YR 3/1	80						20% Spoil
4"+	Spoil	90						
	·							
	·				·			
	· 				· - 			
¹ Type: C-Con	centration, D=Deple	tion PM_P	oduced Matrix CS-	Covered o	r Coatod Sand	Grains	² Location: PL=Pore	Lining M-Matrix
Hydric Soil		tion, Kivi=K	educed Matrix, CS=	Covered 0	Coaled Sand		or Problematic Hydi	
-			Debuglus De	Jan Curfaga	(C0) (I DD C T			
Historol (/	·				(S8) (LRR S, T,	J)	1 cm Muck (A9)	
	pedon (A2)		Thin Dark Su				2 cm Muck (A10	
Black Hist	ic (A3)		Loamy Muck	y Mineral (F	1) (LRR O)			(F18) (outside MLRA 150A,B)
Hydrogen	Sulfide (A4)		Loamy Gleye	ed Matric (F2	2)		Piedmont Flood	plain Soils (F19) (LRR P, S, T)
Stratified I	Layers (A5)		Depleted Ma	trix (F3)			Anomalous Brig	ht Loamy Soils (F(20)
Organic B	odies (A6) (LRR P, T,	U)	Redox Dark	Surface (F6)			(MLRA 153B)	
5 cm Mucl	ky Mineral (A7) (LRR P	P, T, U)	Depleted Da	rk Surface (F	7)		Red Parent Mat	erial (TF2)
Muck Pres	sence (A8) (LRR U)		Redox Depre	essions (F8)			Very Shallow Da	ark Surface (TF-12) (LRR T, U)
1 cm Mucl	k (A9) (LRR P, T)		Marl (F10) (L	.RR U)			Other (Explain in	n Remarks)
Depleted I	Below Dark Surface (A	11)	Depleted Oc	hric (F11) (N	ILRA 151)			
Thick Dark	k Surface (A12)		Iron-Mangan	ese Masses	(F12)(LRR O, P	T)	3Indicators of hy	drophytic vegetation and
Coast Pra	irie Redox (A16) (MLR	A 150A)	Umbric Surfa	ace (F13) (Li	RR P, T, U)		wetland hydrolo	gy must be present,
Sandy Mu	icky Mineral (S1) (LRR	O, S)	Delta Ochric	(F17) (MLR .	A 151)			f or problematic.
	eyed Matrix (S4)				LRA 150A, 150B	1		
Sandy Re					s (F19) <u>(MLRA 1</u>			
				-	· Soils (F20) <u>(MLF</u>	-	153D)	
	Matrix (S6)	2 T II)	Allomaious	ongin Loamy	30113 (1 20) <u>(1VILI</u>	(A 149A, 1550,	<u> 100D)</u>	
Daik Sui	rface (S7) (LRR P, S	5, 1, 0)						
Restrictive La	yer (If observed):							
Type:	, (Hydric Soil	Present? Yes	No <u>X</u> _
Depth (Ir	nches):		_			,		
Dopan (ii								
Remarks:								
remarks.								
1								

APPENDIX B

APPROVED JURISDICTIONAL DETERMINATION FORM

027545-00 (12)

APPROVED JURISDICTIONAL DETERMINATION FORM **U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SEC A.	CTION I: BACKGROUND INFORMATION REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):
В.	DISTRICT OFFICE, FILE NAME, AND NUMBER:
с.	PROJECT LOCATION AND BACKGROUND INFORMATION: State: Texas County/parish/borough: Jefferson City: Port Neches Center coordinates of site (lat/long in degree decimal format): Lat. 29.9652° N, Long. 93.9182° W. Universal Transverse Mercator: WGS84 Name of nearest waterbody: Jefferson Canal Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Star Lake Canal
	Name of watershed or Hydrologic Unit Code (HUC): 12020003 Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request. Check if other sites (e.g., offsite mitigation sites, disposal sites, etc) are associated with this action and are recorded on a different JD form.
D.	REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY): Office (Desk) Determination. Date: Field Determination. Date(s): 3/8-9/2009
	CTION II: SUMMARY OF FINDINGS RHA SECTION 10 DETERMINATION OF JURISDICTION.
	re Pick List "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the ew area. [Required] Waters subject to the ebb and flow of the tide. Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:
В.	CWA SECTION 404 DETERMINATION OF JURISDICTION.
Γhe	re Are "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]
	1. Waters of the U.S. a. Indicate presence of waters of U.S. in review area (check all that apply): TNWs, including territorial seas Wetlands adjacent to TNWs Relatively permanent waters ² (RPWs) that flow directly or indirectly into TNWs Non-RPWs that flow directly or indirectly into TNWs Wetlands directly abutting RPWs that flow directly or indirectly into TNWs Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs Impoundments of jurisdictional waters Isolated (interstate or intrastate) waters, including isolated wetlands
	b. Identify (estimate) size of waters of the U.S. in the review area: Non-wetland waters: 1150 linear feet: 6 width (ft) and/or acres. Wetlands: NA acres.
	c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual Elevation of established OHWM (if known):
	 Non-regulated waters/wetlands (check if applicable):³ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.
² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1.	TNW Identify TNW:	
	Summarize rationale supporting determination: .	
2.	Wetland adjacent to TNW Summarize rationale supporting conclusion that wetland is "adjacent":	

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: Pick List Drainage area: Pick List Average annual rainfall: inches Average annual snowfall: inches (ii) Physical Characteristics: (a) Relationship with TNW: ☐ Tributary flows directly into TNW. Tributary flows through **Pick List** tributaries before entering TNW. Project waters are **Pick List** river miles from TNW. Project waters are Pick List river miles from RPW. Project waters are **Pick List** aerial (straight) miles from TNW. Project waters are **Pick List** aerial (straight) miles from RPW. Project waters cross or serve as state boundaries. Explain: Identify flow route to TNW⁵: Tributary stream order, if known:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

	(b)	General Tributary Characteristics (check all that apply):
		Tributary is: Natural
		Artificial (man-made). Explain:
		☐ Manipulated (man-altered). Explain:
		Tributary properties with respect to top of bank (estimate): Average width: feet Average depth: feet Average side slopes: Pick List.
		Primary tributary substrate composition (check all that apply): Silts Sands Concrete Cobbles Gravel Muck Bedrock Vegetation. Type/% cover: Other. Explain:
		Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Presence of run/riffle/pool complexes. Explain: Tributary geometry: Pick List Tributary gradient (approximate average slope): %
	(c)	Flow: Tributary provides for: Pick List Estimate average number of flow events in review area/year: Pick List Describe flow regime: Other information on duration and volume:
		Surface flow is: Pick List. Characteristics:
		Subsurface flow: Pick List. Explain findings: Dye (or other) test performed:
		Tributary has (check all that apply): Bed and banks OHWM ⁶ (check all indicators that apply): clear, natural line impressed on the bank changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining other (list): Discontinuous OHWM. Explain:
		If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply): High Tide Line indicated by:
(iii)	Cha	emical Characteristics: practerize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.) Explain: tiffy specific pollutants, if known:

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

	(iv)	Biological Characteristics. Channel supports (check all that apply): Riparian corridor. Characteristics (type, average width): Wetland fringe. Characteristics: Habitat for: Federally Listed species. Explain findings: Fish/spawn areas. Explain findings: Other environmentally-sensitive species. Explain findings: Aquatic/wildlife diversity. Explain findings:
2.	Cha	racteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW
	(i)	Physical Characteristics: (a) General Wetland Characteristics: Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
		(b) General Flow Relationship with Non-TNW: Flow is: Pick List. Explain: Surface flow is: Pick List Characteristics: Subsurface flow: Pick List. Explain findings: □ Dye (or other) test performed:
		(c) Wetland Adjacency Determination with Non-TNW: ☐ Directly abutting ☐ Not directly abutting ☐ Discrete wetland hydrologic connection. Explain: ☐ Ecological connection. Explain: ☐ Separated by berm/barrier. Explain:
		(d) Proximity (Relationship) to TNW Project wetlands are Pick List river miles from TNW. Project waters are Pick List aerial (straight) miles from TNW. Flow is from: Pick List. Estimate approximate location of wetland as within the Pick List floodplain.
	(ii)	Chemical Characteristics: Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Identify specific pollutants, if known:
	(iii)	Biological Characteristics. Wetland supports (check all that apply): Riparian buffer. Characteristics (type, average width): Vegetation type/percent cover. Explain: Habitat for: Federally Listed species. Explain findings: Fish/spawn areas. Explain findings: Other environmentally-sensitive species. Explain findings: Aquatic/wildlife diversity. Explain findings:
3.	Cha	racteristics of all wetlands adjacent to the tributary (if any) All wetland(s) being considered in the cumulative analysis: Pick List Approximately () acres in total are being considered in the cumulative analysis.

For each wetland,	specify the following:	

Directly abuts? (Y/N) Size (in acres) Directly abuts? (Y/N) Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

- 1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
- 2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- 3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1.	TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area: TNWs: linear feet width (ft), Or, acres. Wetlands adjacent to TNWs: acres.
2.	RPWs that flow directly or indirectly into TNWs. ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

	Provide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: 1150 linear feet 6width (ft).
	Other non-wetland waters: acres. Identify type(s) of waters:
3.	Non-RPWs ⁸ that flow directly or indirectly into TNWs. Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.
	Provide estimates for jurisdictional waters within the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: .
4.	Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands. Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
	■ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
	Provide acreage estimates for jurisdictional wetlands in the review area: acres.
5.	Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs. Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.
	Provide acreage estimates for jurisdictional wetlands in the review area: acres.
6.	Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs. Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.
	Provide estimates for jurisdictional wetlands in the review area: acres.
7.	Impoundments of jurisdictional waters. As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional. Demonstrate that impoundment was created from "waters of the U.S.," or Demonstrate that water meets the criteria for one of the categories presented above (1-6), or Demonstrate that water is isolated with a nexus to commerce (see E below).
SUC	CLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, GRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY CH WATERS (CHECK ALL THAT APPLY): 10 which are or could be used by interstate or foreign travelers for recreational or other purposes. from which fish or shellfish are or could be taken and sold in interstate or foreign commerce. which are or could be used for industrial purposes by industries in interstate commerce. Interstate isolated waters. Explain: Other factors. Explain:
Ider	ntify water body and summarize rationale supporting determination:

E.

 ⁸See Footnote # 3.
 ⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
 ¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

		vide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: Wetlands: acres.
F.		N-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY): If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements. Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce. Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR). Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: Other: (explain, if not covered above):
	fact	vide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> potential basis of jurisdiction is the MBR cors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional gment (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic resource: Wetlands: acres.
		vide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such nding is required for jurisdiction (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet, width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic resource: Wetlands: acres.
	SUP	DN IV: DATA SOURCES. PORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked requested, appropriately reference sources below):
	\boxtimes	Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Data sheets prepared/submitted by or on behalf of the applicant/consultant. Office concurs with data sheets/delineation report. Office does not concur with data sheets/delineation report.
		Data sheets prepared by the Corps: Corps navigable waters' study: U.S. Geological Survey Hydrologic Atlas: USGS NHD data. USGS 8 and 12 digit HUC maps.
		U.S. Geological Survey map(s). Cite scale & quad name: USDA Natural Resources Conservation Service Soil Survey. Citation: National wetlands inventory map(s). Cite name: figure 3 - National Wetlands Inventory Map. State/Local wetland inventory map(s): FEMA/FIRM maps: 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929) Photographs: ☐ Aerial (Name & Date):
		or ☑ Other (Name & Date): Previous determination(s). File no. and date of response letter: Applicable/supporting case law: Applicable/supporting scientific literature: Other information (please specify):

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B. ADDITIONAL COMMENTS TO SUPPORT JD:

APPENDIX C

SITE PHOTOGRAPHS

027545-00 (12)



PHOTOGRAPH 1: View of sample location 2 (looking north).



PHOTOGRAPH 2: View of sample location 3 (looking south).



PHOTOGRAPH 3: View of soil sample pit at sample location 3.



PHOTOGRAPH 4: View of sample location 4 (looking north).



PHOTOGRAPH 5: View of sample location 5 (looking south).



PHOTOGRAPH 6: View of sample location 6 (looking north).



PHOTOGRAPH 7: View of sample location 7 (looking east).



PHOTOGRAPH 8: View of sample location 8 (looking north).



PHOTOGRAPH 9: View of sample location 9 (looking west).